

# AMERICAN VETERINARY REVIEW.

OCTOBER, 1896.

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## EDITORIAL.

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### THE BUFFALO VETERINARY CONVENTIONS.

For the past few months our editorial pages have constantly referred to the above events. On some occasions we spurred the officials, for fear that some of the details for that perfect success which was every member's earnest wish, might be omitted; finally, in the last words that we were permitted to speak to our readers before the assembling of the hosts we became speculative, predicting a large outpouring of members and a most enthusiastic meeting. This month we become realistic, and can now speak of what did occur. To say that the meeting was a success from every standpoint does not give the reader who for one reason or another was prevented from attending a correct impression of the kind of success that it was. If we pile up adjectives in front of the word "success," such as "great," "grand," "pronounced," etc., we doubt if we can convey to his mind the fact that it was superior in every sense to all other meetings of the United States Veterinary Medical Association that has ever been held since its birth thirty-three years ago. Many things conspired to accomplish this. Intellectually, socially and progressively it was such a meeting as would be looked for and hoped for from all the higher elements of the profession of veterinary medicine in the United States. There can be no doubt but that this association is becoming an authoritative body upon State medicine; its deliberations are largely made up of the consideration of diseases and conditions which

affect man and the lower animals in common, or that affect the national wealth in the devastation of herds and flocks. The subjects of extermination and prophylaxy are the chief therapeutical measures discussed, and in a sense each member becomes a veterinary statesman. This is the highest ground that can be assumed by our profession and it is worthy the best minds and the most noble character of her members. This impression was very forcibly presented at Buffalo, when a survey of the faces that were wrapped in earnest attention throughout the proceedings showed probably a majority actively engaged in the practical work of sanitary medicine throughout this and other countries—State veterinarians, experiment station attachés, teachers in agricultural colleges, inspectors of animal food products, and others in kindred lines. There was, possibly, a minority of practitioners of veterinary surgery, family physicians (so to speak), men who draw their entire sustenance from private practice, and who dropped their daily routine to attend the meeting. There were some subjects which directly appealed to him, but the majority of the subjects were of more interest to the former class. Perhaps, this is as it should be, only we wish to draw the attention of the association to the evident tendency of the deliberations, that they may give it consideration, and decide if it is the wisest course. Certainly a three-day meeting is not too long in which to discuss the many phases of sanitary medicine, and very little time can be spared for other subjects—so important is the question of state medicine—but we rather fear that the meetings will lose interest to those practical men who are, or have been in the past, the bone and sinew of the organization. It may be that the national body should devote itself exclusively to the department of sanitary medicine, and that local associations should deal more with the cruder diseases of every-day practice; but the question is narrowing itself to that decision.

There was more animation, more earnestness, more good fellowship, and a more marked desire for the accumulation of knowledge, and a jealousy of the good name of the profession,

manifested than was ever before observed, while the attendance, especially of members, was a record-breaker. And this in a year when the status of the profession financially has partaken to a distressing extent of the general business torpor of the times. It will be unnecessary here to review the events that transpired, for some forty pages of the REVIEW are devoted to a complete analysis of the work of the convention, undoubtedly the most complete that any American veterinary magazine ever gave to its readers in a single issue. We simply here draw the estimate of the work and character of the meeting, which, as already stated, was, in our estimation, as well as that of every old association man whom we interviewed, the best in work, the best in enthusiasm, the best in attendance; and it gave promise of increased usefulness and interest.

The meeting of the Association of Faculties was well attended, earnest in endeavors, and productive of some results. A thought could scarcely escape one, however, who listened to the deliberations, and that was that there were many points of difference between the State Universities, maintained by State appropriation, and the private schools, which have to rely upon private means for their existence. It may be well for the association to bear in mind this difference when placing matriculation so high as to invite only Bachelors or Masters of Arts, as was hinted at by a member of one of the university faculties.

The meeting of the New York State Association was upon the whole a successful one, but scarcely as well attended as was expected, considering the great opportunities offered the members to attend the national meeting at the same time, and many papers which were announced were not presented. But, nevertheless, those which were read were extremely interesting, and the discussions quite animated and valuable. Next year it meets in Syracuse, and every effort should be made to enthuse the members to a more liberal outpouring.

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GUARD YOUR VETERINARY LAWS.—At the close of the last session of the New York legislature, the REVIEW obtained from

Dr. O'Shea, Chairman of the Committee on Legislation of the Veterinary Medical Association of New York County, a *résumé* of legislation affecting the veterinary profession during the session that had just closed. It was surprising to note the number of bills that had been introduced in the interests of private individuals, all or any of which, if they had become laws, would have worked incalculable injury to the legitimate profession in New York State. Only for the vigilance of the committees of the State and County Societies many of these would have been placed upon the statute books, but they opposed them so vigorously that their progress was estopped—only to be renewed again when their vigilance was less energetic. The question of employing permanent counsel in Albany had been favorably discussed by the County Society, his duties to consist of a daily scrutiny of the bills to be introduced. Last winter this work was done by the voluntary act of an Albany practitioner, Dr. William Henry Kelly, of the State Society, and it was largely through the alarm sent out by him that the profession was apprised of impending adverse legislation. It would appear that the proposition to retain counsel resident at the capital is more imperative for the coming winter than ever before, as the rumor is now afloat that an attempt upon a large scale will be made at the next session to break the law which has placed our colleges under the jurisdiction of the Board of Regents and our examinations in the hands of the Board of Examiners. The enactment of these laws is in the direct line of the educational advancement which is everywhere manifest, and no power on earth should be exerted to break them down. It does not affect the question, so far as the REVIEW is concerned, that the appointment of that Board of Examiners was in direct opposition to our conception of the manner in which it should have been; that some of its members should never have been placed there; that some of them are a direct affront to a large part of the legitimate profession of the State. The Board itself is the logical climax of the demands of the profession for a higher standard of proficiency, and it must be preserved, even though it should



be purified. It has been mooted that an attempt will be made to repeal or amend the law creating this Board, and the REVIEW sounds the alarm to all members of the profession in the Empire State, that they may oppose such a disaster by every means in their power, and crush it so badly that no man nor body of men will ever again have the effrontery to attack such sovereign laws that have been demanded, worked for, and secured by the unanimous and united profession of veterinary medicine in New York State.

To be forewarned, is to be forearmed !

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BOVINE DIPHTHERIA.—Has Dr. Winchester discovered diphtheria in cattle? In a paper read before the United States Veterinary Medical Association he describes a number of cases whose clinical history and post-mortem lesions would lead one to suspect it; but he has gone further, and, not relying upon his own familiarity with the microscope, has obtained the opinion of such high authority as Prof. Harold C. Ernst, of the Bacteriological Department of the Harvard School of Medicine, who says the bacilli obtained from the membrane of the throat of the cattle described by Dr. Winchester greatly resemble and he thinks they are identical with the Klebs-Löffler bacillus. The paper, which will be found in a very complete form elsewhere in the REVIEW, is, therefore, a most valuable contribution to the study of comparative pathology, and the Doctor is entitled to a great many thanks for his intelligent and painstaking investigation of the subject. We have no doubt but that his recognition of the disease will be followed by many observations of a kindred nature from others, and in a short time we will have another contagious disease added to our already long list affecting the members of the bovine family.

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VETERINARIANS residing in counties adjacent to New York County are welcome to be present at the next meeting of the Veterinary Medical Association of New York County. They should join the society.

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ORIGINAL ARTICLES.

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**BOVINE DIPHTHERIA.**

BY J. F. WINCHESTER, B.Sc., D.V.S., LAWRENCE, MASS.

A Paper read before the U. S. V. M. A., at Buffalo, Sept. 2.

Having been requested by the President of this Association to prepare a paper for this meeting, I will present for your consideration the subject of Diphtheria. In presenting this subject it is my expectation that some may be induced to make closer examinations after death of those animals that die from apparently mysterious diseases. I use the expression mysterious from the fact that in the outbreak that I shall hereafter cite, if I may so term it, the mystery was looked for in the well, the hay and the pasture, with negative results.

In the course of time a case similar to those that had died presented itself, and that animal was given to me. As a result of that gift I present this paper to-day, hoping to command your attention for the time allotted, and at the same time to suggest that, notwithstanding the want of record of the existence of diphtheria in cows, they may be susceptible to the one contagious disease that is increasing in the human family. Aside from the clinical picture and post-mortem conditions as they appeared to me, you will recognize the acknowledged authorities on diphtheria, whose works I have consulted and from whom I transcribe.

**DIPHTHERIA.**

The word diphtheria is derived from the Greek, signifying parchment.

*Synonyms.*—Diphtheria among mankind has been described by writers in different countries under a variety of names, such as cynancha maligna, cynancha contagiosa, angina maligna, angina gangrenosa, malignant sore throat, epidemic croup, etc. This malady was described by Bard in 1789 under the name angina suffocativa.

The distinctive characters of the affection were very clearly

stated by Bretonneau in 1821 to 1826, who applied to it the term diphthetrite, whence originated the name diphtheria, proposed by Trousseau. This name, the significance of which relates to the most characteristic local event, namely, the formation of a false membrane, has the negative merit of not involving any hypothesis concerning the pathology of the affection.

Diphtheria is defined as a specific infectious disease characterized by a local fibrinous exudate, usually upon a mucous membrane, and by constitutional symptoms of varying intensity. The presence of the Klebs-Löffler bacillus may be regarded as the etiological criterion by which true diphtheria may be distinguished from other forms of pseudo membranous inflammations.

*Etiology.*—Diphtheria is endemic in the larger cities of population, and at times epidemic. It is a fact that while other contagious diseases have diminished within the past decade, this malady has increased in cities. This disease is not confined to cities; it has prevailed in country districts, and the affection in many instances seems to be specially virulent.

Sporadic cases occur under circumstances which seem to render it impossible that the special germ of diphtheria had been introduced from without, but a similar apparently spontaneous development of other contagious diseases occurs, so that these instances cannot overthrow the general belief in the contagiousness of diphtheria. At times it is true that it is often impossible to trace the source of infection in cases of diphtheria. "The experimental inoculations of animals with diphtheretic exudation has not yielded decisive results." (Flint.)

There is evidence of the transporting of the virus by individuals who do not become infected with the disease. The contagion of diphtheria often adheres tenaciously to localities where it has once gained a foothold, and months may elapse and then a case occurs. Surroundings and conditions do not appear to be connected with the causation. It occurs at all seasons of the year, but most frequently during the changeable weather. The period of incubation is generally between two

and eight days, but it may be longer. The disease is often limited in its prevalence in particular sections to a circumscribed area. It has been observed to be restricted to a few houses, a single house, or to a narrow strip of land on the banks of a stream.

The special cause seems to require auxiliary causes, at present unknown, which are peculiar to certain localities. Epidemics differ as regards certain features of the disease and the rate of fatality. In respect to variations at different times and places, diphtheria resembles other epidemic diseases.

*Clinical History.*—Diphtheria presents in different cases such differences that some authors have described several varieties of the disease. The marked point of difference relates to the development of the disease. The attack is sometimes abrupt, beginning with a chill more or less pronounced, and followed with a marked elevation of the temperature.

At other times the disease may begin with symptoms denoting great prostration. When the development is gradual and insidious and there are few or no local symptoms pointing to the existence of the malady, the characteristic affection of the throat reveals the disease. When the fauces alone are involved there is seldom any pain or soreness, and in some instances the sensibility is diminished. Incomplete paralysis of the muscles concerned in deglutition, which is sometimes a sequel, may be a concomitant of the disease, rendering swallowing of liquid more or less difficult, and regurgitation through the nose. The breath may be foetid.

When the false membrane extends over the buccal mucous surface, it occasions more or less pain on the introduction of food or drink into the mouth, together with ptyalism and stiffness of the parts. When the nares are affected there is a discharge from the nostrils which may be limited to one nostril. The gravity of the disease is commensurate with the extent of the local affection and the abundance of the exudation.

However mild cases may be at the outset, there is always a liability to the occurrence of diphtheritic inflammations in new

situations, to the development of grave symptoms and to important sequelæ. The symptoms vary with the anatomical system involved, namely, circulatory, cutaneous, respiratory, digestive, nervous and urinary.

The pulse may be frequent at first, then suddenly falling below the normal. Epistaxis is sometimes profuse, and there may be hæmorrhage from throat and mouth, which denotes great danger. The skin rarely presents much increase of heat, and not infrequently in the course of the disease the surface becomes cool or cold. Pyrexia, as a rule, is less than in most other acute diseases; however, it may be high.

Petecchial spots or ecchymoses, are sometimes observed, generally in connection with hæmorrhage from mucous surfaces. In some cases the skin presents an anæmic aspect, even when hæmorrhage has not occurred. Diarrhœa is not uncommon, and is a bad omen. In the majority of cases the mind is unaffected, but delirium does occur; convulsions and coma occasionally occur and are a forerunner of a fatal termination. The probability in these cases is that it is due to uræmia.

Albuminuria is a frequent symptom, but it varies considerably at different times. In cases in which albumen is abundant the diphtheritic exudation is generally large and the glands of the neck unusually great.

Hæmaturia has been observed in cases presenting symptoms of purpura. The duration of the disease is between one and two weeks. In fatal cases death may occur as soon as forty-eight hours; on the other hand the illness may continue for an indefinite period, owing to the sequelæ. The sequelæ of this disease form an important part of the clinical history; anæmia and general debility are likely to persist for a considerable period. Death may occur from syncope due to heart failure. Paralysis, involving both voluntary and involuntary muscles, is a characteristic sequel.

The lesions of the paralysis have been found in the central nervous system, in the spinal nerve roots and in the peripheral nerves. The anatomical basis of the paralysis does not seem to



be the same in all cases. In several cases the lesions of a multiple degenerative neuritis have been found. The characters of the paralysis, particularly the usually rapid recovery, are in favor of the peripheral nature of the lesion in many cases.

*Pathology.*—When a mucous membrane is injured in such a way that its epithelium dies without desquamation, while its blood vessels are damaged and pour out an abundant exudation, it sometimes happens that the dead epithelial cells become saturated with the exuded liquid and then pass into a peculiar condition of rigidity akin to coagulation.

The seat of this change appears to the naked eye as a dull greyish raised patch surrounded by red and swollen mucous membrane. The exudation is rich in albumen, and the transformed cells take on the appearance of a kind of coarse mesh work, almost or altogether devoid of nuclei.

The subepithelial areolar tissue is beset with filaments of fibrin and leucocytes. Hæmorrhages are not uncommon. Inflammations of this kind, in which the tissue itself coagulates into a solid mass, are called diphtheritic. When the necrosis and coagulation extend only to the epithelium we may speak of the process as superficial diphtheritis. It is not necessary that the whole of the epithelium ultimately affected should perish at the outset; some part of it at least may perish secondarily in consequence of the inflammation.

Superficial diphtheritis occurs chiefly in the organs of the throat, but the conjunctivæ and the epithelium of the urogenital organs are also occasionally attacked. The structure of the respiratory organs and the intestines seems not to favor this form of inflammation. When their epithelium perishes from any cause it is usually shed or dissolved away and a croupous false membrane is formed instead of the diphtheritic coagulation.

Necrosis and lymph coagulation in the tissue are the distinguishing features of the diphtheritic inflammation; whether it is superficial or deep its nature is the same—the new seat is of secondary importance. Deep or parenchymatous diphtheritis affects a greater extent of tissue than the superficial form. It is

characterized by the coagulation, not merely of the epithelium, but also of the underlying connective tissues.

The affected patch is swollen and assumes a whitish or greyish tint, the discoloration extending through the epithelium to the connective tissue structures. The epithelium in some cases is lost altogether, and then the diphtheritic patch consists of dead connective tissue only. The patch is turbid and granular in texture, or it may be homogeneous or composed of amorphous hyaline blocks. The nuclei are always more or less completely lost. The small vessels which permeate the patch show signs of a homogeneous transformation of their walls.

The necrotic tissue is separated from the living by a zone of cellular infiltration. Fibrinous filaments are seen here and there through the mass. The lymphatics in the neighborhood contain coagula and leucocytes. Necrotic process may attack any of the mucous membranes; it is especially common as a result of infection of one kind or another. It is often demonstrated that it is associated with the invasion of the tissue by bacteria.

The formation of the necrotic patch or slough is, of course, not the first stage of the diphtheritic process. The sloughs themselves act as irritants and set up inflammation around them. Superficial epithelial sloughs become in this way infiltrated with pus and so are loosened and cast off. The loss of substance is then made good by regenerative multiplication of the remaining epithelial cells. Larger and deeper sloughs may in like manner be separated by suppurative inflammation taking place around them, and the deficiency is then made up by the formation of a cicatrix, which in process of time may be covered over with a new epithelium.

But the process often maintains its destructive character for a considerable time, extending continually to greater depths, and often inducing intense purulent inflammation over a wide area around the initial lesion.

Sometimes the necrotic inflammation takes on a gangrenous character; that is to say, micro-organisms penetrate the diseased tissues and set up in them septic or putrid decomposition. The

affection is then much more grave, for the products of decomposition act as highly noxious irritants in the tissues that are still healthy. Definitive suppuration may, however, in this case also lead to the separation of the dead tissues from the living and so allow the process of repair to begin.

Neuritis, simple or multiple, is due to the irritant being brought by the blood or lymph to the nerve inducing the inflammation, and is regarded as a direct result of the general infection.

The history of the cases on which is based the theory that cows may be susceptible to diphtheria, will be found in the following pages. The facts about three of the five cows were gleaned from the owner and attendant. The third cow had been sick three weeks before I was called, while the fifth and last was under my observation from the beginning. At the commencement of the outbreak there were four cows kept on the place. A cow was bought in September that did not contract the malady. Later in the fall two heifers were purchased and one of these, designated as No. 5, died the following March.

In the middle of July, 1893, a cow, whose time was about out to calve, was turned out to pasture on a side hill having low land at the base. In due time the physiological act took place, and the evening before it she was apparently all right. The next morning the cow could not get up and the calf was dead. The owner thinking the cow was spent from the exertion had her put on a drag and taken to the barn.

Arriving at the farm the cow got up and there was noticed a thick discharge from the nostrils; the lower eyelids were swollen, and there was a continuous flow of tears, besides well marked ptialism. She had trembling spells (chills) attended with hurried respiration, paroxysms of pain, at which time she manifested mental disturbance.

The appetite was deranged, but she would eat and drink a little at times. The bowels acted, but not so often as normal. The back was arched, with periods of well marked straining, urination was quite frequent, and she wasted in flesh quite

rapidly. This condition continued for six days, and she died in severe paroxysms. This animal was not housed with the rest of the herd, but there was only one attendant for all. The attention given this animal was smoking the head, washing away the discharges, and medicating her with such remedies as the owner and attendant thought desirable.

Seven days after No. 1 died, another was noticed to be sick, and the first thing to attract attention was a swelling of the eyelids with a copious discharge of tears. This was soon followed by a discharge from the nostrils and ptialism, which was accompanied with a frequent attempt to swallow. Associated with these symptoms was trembling, arched back, tenesmus, soon to be followed by nervous hyperaesthesia, which induced the owner to have her killed at the third day of her sickness.

August 12th the third cow was taken sick and presented the same symptoms as the others, but not in so acute a form as the second. I was called to see this animal after she had been sick for three weeks. I found her breathing short and quick. Her head was pressed against the wall, the conjunctivæ were swollen, the pupils dilated, and a copious discharge flowing from the lachrymal ducts. The discharge from the nostrils was thick, while that from the mouth was frothy. Her appetite was fair, and the functions of the body were normal, with the exception of the secretion of the milk, which was completely stopped. It being impossible to lead her any distance she was killed by bleeding, and the post-mortem revealed a congestion of the brain. The rest of the viscera were apparently normal, but the throat was not examined for reasons well known to some of this audience.

Nothing more went amiss with the cows until the following November, when on the twenty-fifth a fourth cow presented symptoms identical to the other three, with the exception of the fæces, which were black and covered with mucous. This cow died the second of December, 1893.

On February 25th, 1894, the fifth cow was taken sick with the same symptoms as the other four. This is the animal to

which I referred earlier as the gift, the one whose sickness I watched throughout.

I found her (a heifer) with a temperature of 106 F., pulse very much increased in number, and the artery small. The respirations were very much hurried and trembling. The skin was wet with perspiration which stood out in drops. There was a copious discharge from the nostrils of a thin tenacious character, with frothing from the mouth. The conjunctivæ were swollen and the mucous membrane livid with a continual flow of tears. Auscultation of the lungs revealed well-defined mucous râles, which were very noticeable along the trachea, increasing at the larynx. Pressure on the larynx was objected to, causing the respiration to become audible, and at the same time causing the animal to swallow. The fæces were dark in color. The next day the breathing was still hurried, the throat was very sensitive to pressure, while the temperature had dropped to 103 F. under the influence of *veratrum viridæ*. The discharge from the mouth and nostrils had increased, and the secretion from the conjunctivæ was abundant. Her appetite was gone and she did not eat nor drink after the second day of her sickness, which lasted for eight days.

The fæces at first were dark in color, at times coated with mucous, but the last few days she had diarrhœa. Blindness became apparent toward the end of her sickness, and when standing she would press her head against the wall. The urine was at times bloody in color, according to the statement of the attendant, but when I saw it, it was thicker than normal and of a deep amber color.

During the times she was under observation, aside from the described symptoms there was nothing about her actions to attract attention. She gradually wasted in flesh and her strength diminished until the sixth day, when she aborted, being seven months gone. This was her first offspring.

Death ended her March 3d, two days later, at about 11.30 A. M., and it was so gradual that the attendant who was near by did not notice it. The post-mortem was made at 3.30 P. M.



Emaciated, no bloating, discharge from the eyes, nostrils and mouth; skin dry, shrunken, and with difficulty removed. The blood vessels directly under the skin filled with blood. On opening the abdominal cavity the blood vessels in the serous membranes were filled with blood. The spleen was atrophied, stomach and intestines were apparently normal; liver hypertrophied, with gall bladder full of a dark, viscid, tarry bile. The substance of the liver friable, yellowish in color, filled with blood, with capsule adherent. Lungs contained several hæmorrhagic infarcts. The pericardium contained a small amount of serum, dark in color, and the walls of the heart presented petechial spots. On the outside of the auricles under the serous membrane was an amber colored apparently gelatinous exudate.

The cavities of the heart were filled with semi-coagulated blood. An ulcer was found on one side of the tongue near its base. The mucous membrane of the pharynx and larynx was covered with a yellowish-brown tough membrane that was adherent. A large elliptical ulcer was present at the base of the epiglottis, and the mucous membrane of the trachea for its entire length was dark brown in color with a similar adherent new growth as was found in the larynx. The bronchial tubes contained a large quantity of froth, but were free from the adherent membrane. This new formation was subjected to the microscope by Dr. J. M. Parker, and he was of the opinion that the Klebs-Löffler bacillus was present in the tissue. In order to confirm his opinion a portion of the tissue was sent to Dr. H. C. Ernst, of Harvard Medical School, and he reports as follows:

HARVARD UNIVERSITY MEDICAL SCHOOL,

BACTERIOLOGICAL LABORATORY, BOYLSTON AND EXETER STREETS,

BOSTON, March 29, 1894.

*Dear Doctor:*—We have found, in section of the material from the trachea of that cow, bacilli that in size and general appearance resemble very closely if they are not identical with the Klebs-Löffler bacillus.

Dr. Whitney wants to know if you are going to be able to send that specimen for the museum.

Very sincerely,

HAROLD C. ERST.

In connection with the report of these cases it may be of interest to know that the first week in August, 1893, the attendant of these cows was taken sick. The nature of the sickness was acute indigestion with severe pains over the entire body, attended by sickness at stomach, vomiting and purging. Accompanying this was a general lassitude and lameness. The attending physician pronounced it a case of la grippe. In November and again in the following March the same symptoms were developed. Since then he has been in perfect health, although the period of convalescence was long.

My attention was called to a cow, June 26, 1896, and I found her with a temperature of 102 3-5 F., pulse 54 and respirations 12. In conjunction with these facts ptialism was abundant and frothy, a thick albuminous discharge from the nostrils but not profuse. Lower eyelids were œdematous, with a slight lachrymal secretion. She stood with the head carried to one side when she could not rest it on the fence. The bowels were torpid and the secretion of urine apparently checked.

The act of swallowing took place frequently, while pressure on the larynx was objected to, and at the same time the respirations became audible. Auscultation along the trachea revealed increased mucous râles in its upper third. When made to walk there appeared a partial loss of the power of co-ordination, so much so that she reeled. She had the appearance of being cold, for the hair along her back stood and pointed anteriorly.

The attendant informed me that she had had spells of trembling, and at or about that time she became uncontrollable. The secretion of milk dropped from six to one quart a day, that being the second day of her illness. The following day, June 27th, at noon, the pulse was 60, respiration 24, and the temperature 102 3-5. The discharge from the nostrils was more abundant and thicker than the previous day, conjunctivæ œdematous with abundant ptialism.

Aside from these symptoms there was a marked shrinking or wasting of the body. During this period she would neither eat nor drink. At two P. M. she was started for the knackers, a dis-

tance of about three miles, by being led. Thrice on the way she had paroxysms of choking with acute ptyalism and a copious discharge from the nostrils. After a short rest she would again resume her walk. During the distance she did not cough. The bowels remained torpid, but there was an abundant discharge of urine. At the end of her journey she was turned into a yard and left for the night.

The next morning, June 28th, at nine A. M. I found her dead, lying with the head to one side and on her sternum. There was no evidence of a struggle, and under the mouth was quite a pool of saliva. Post-mortem at ten A. M. No bloating, skin wrinkled with the appearance of parchment, pupils dilated and a general shrinking of the entire body. The mucous membrane of the vagina was red with a mucous discharge from the same. On removing the skin the veins under it were filled with blood, and it adhered as if the animal had been dead two or three days. The abdominal viscera were apparently normal, with the exception of the kidneys, which presented centres of congestion. The larynx presented numerous grey elevations well defined; the mucous membrane at the base of the epiglottis was thickened and rough. The mucous membrane of the trachea and large bronchial tubes was studded with petechial spots, and at places the ecchymosis was confluent. The smaller bronchi were filled with a frothy secretion. Pericardium contained considerable dark colored fluid. Ecchymotic spots were well defined over the surface of the heart, while along the edges of the auricles under the serous membrane there was a well-defined yellow serous exudate. The external coats of the large blood vessels at the heart were studded with ecchymotic spots. On opening the heart it was found to contain semi-coagulated blood, which was in evidence through the system. When the meninges of the brain were opened there escaped considerable clear serum. The blood vessels of the brain on the surface and in the sinuses were engorged with blood. The plexi of the ventricles were filled with blood, and the cavities contained considerable clear fluid.

The larynx was sent to Dr. J. M. Parker, of Haverhill, and he makes the following microscopic report :

AUGUST 29, 1896.

*Dr. J. F. Winchester, Lawrence, Mass.*

DEAR SIR :—The larynx of the cow shows in its middle ventricle an ulcerous patch about  $\frac{3}{8}$  of an inch in diameter. Posteriorly to the vocal cords there are also two raised epithelial patches showing on section a dense fibrinous exudate, beneath which is a mass of small celled proliferation. On staining with alkaline methylene blue (Löffler's) solution, numerous short, thick, slightly curved bacilli resembling the bacillus of diphtheria were seen.

Yours truly,

JOHN M. PARKER.

My object in presenting this paper is to stimulate further investigation in this subject that the true nature of this disease may be demonstrated.

Prof. Osler in his work on the Practice of Medicine, (edition 1892) says, "Cows are not known to be affected spontaneously." The literature relating to veterinary medicine (in English) that I have had the privilege of consulting, does not make mention of the existence in cows of such a malady.

Having presented to you the clinical symptoms and the post-mortem appearances as observed by me; a description of the microscopical lesions with the demonstrated presence of the organisms by those trained in such work, I leave the further investigation of the subject to those better qualified to carry it on.

#### DISCUSSION.

*The President* :—Gentlemen, you have heard this extremely interesting and all-important paper, and it is now open for general discussion. And I hope that this paper will be as freely and as speedily discussed as possible, so that we will be able to dispense with the great amount of business unfinished, and before us. I will call upon Doctor Gill to open this discussion.

*Doctor Gill* :—I know very little about diphtheria. What I have to deal with is the anti-toxine. I do not think I can say anything on the subject because I have not had any experience in that particular line.

*Doctor Clement* :—I have comparatively nothing to say upon this subject, except to congratulate Doctor Winchester, and the Association, for the able manner in which he has presented this subject, and I think we should be very much pleased that these cases have been brought before us in that they present patho-

logical conditions which I have never met with, and which may possibly be of a diphtheritic nature. I was glad to see that Doctor Winchester was so modest in his remarks in simply stating the clinical symptoms as he found them, and the conditions met with at the autopsy, and having these examinations by those we have confidence in, who have a very great reputation in their line of work, and the fact that they say that there is a possibility of its being of a diphtheritic nature, it seems to me to be a compliment to this investigation.

*The President* :—I will ask Doctor Knowles to give us something in this line.

*Doctor Knowles* :—A number of years ago I had a series of cases that very closely resembled the ones described by Doctor Winchester. There were twelve or fourteen in the herd, and I think three or four deaths. The outbreak was characterized by a loss of appetite and exudation or discharge of mucous from one or both nostrils, and an apparent drying up of the skin of the udder, which eventually turned a dark terra-cotta color, leaving a rough surface for a few days. These cows had very sore throats. The milk secretion was considerably lessened, but not wholly dried up. I thought it more closely resembled scarlet fever, which is the twin brother of diphtheria.

*Doctor Lyman* :—I have been very much interested, as all of us have, in listening to this paper which was so new and exactly to the point. It seems to me to be a paper of particular value in, perhaps, giving the first information that such a disease as diphtheria exists in animals, and I think it may, without doubt, be looked upon as a valuable contribution to a subject in which we are thoroughly interested, or should be, to-day. If my memory serve me right, a series of cases were reported by a surgeon, a number of years ago, in Scotland, long before the diphtheritic bacteria came to be discussed, which he called diphtheria. There was some confusion, I think, about it in his line, as well as by some correspondents at that time, and it was claimed to be something other than diphtheria. There was no bacterial knowledge, as we say, at that time. There are certain suggestions coming to me which show, upon the description of symptoms given by Doctor Winchester, that the disease is rather uncommon, but still not unknown, which was described as malignant catarrhal fever of cattle. There may be some connection shown later on of the disease with malignant catarrh, and this disease remains to be found out. I thank Doctor Winchester for giving me the pleasure of listening to such a valuable and interesting paper.



*Doctor Stalker* :—A few cases came under the observation of our station just as I was leaving home, though I am sorry to say I did not have time to collect the facts in regard to these cases, but my co-worker in the station was sent to a farm seventy-five miles from the college where the disease had baffled the local veterinarians, which was affecting a herd of cattle. I got a few of the facts pertaining to this outbreak ; I think four deaths had occurred among calves that were kept together in rather a filthy yard. The symptoms as gathered from the owner were all I had. I think my co-worker did not see any of them alive, but made a post-mortem examination on the last one that died. The symptoms very closely resembled the ones in Doctor Winchester's paper, and some of the pathology shows very close correspondence to that indicated in the paper. The deaths occurred, as I recall it now, at an expiration of from four to six days in these cases. We have just arranged for a series of inoculations and experiments in our laboratory, to work upon the material of these animals, none of which is commenced, but we are in hopes of having some facts that will be of value along this line after a little, but my knowledge of these cases is very imperfect for the reasons stated.

*Doctor Winchester* :—I might state at this time that these four cattle that I spoke of in my paper were kept in a place where the platform in the stable was about six inches above the floor, and until the microscopic report on the case was at hand we had to content ourselves with the subject of mystery. But after having received that report from Doctor Ernst the subject of mystery was laid one side, and the carpenter and mason were employed to change things, and since that time no other animals have been affected in that dairy. In other words, the barn was torn to pieces and cleaned and fumigated. Underneath the feeding box, of course it was not water-tight, and the discharge from the animals permeated the floor beneath it, and that was one great source of the disease. If there is any possibility of trying this material to prevent the disease from affecting the other animals I think the theory is very acceptable. The second case that I read there, the isolated case, was on a farm where the day previous to my coming, or day before that, there had been taken sick a cow which presented symptoms identical to these others, and the owner—or rather, the foreman of the farm, the owner was not at home at that time—made up his mind that it was the result of eating sheep laurel in the pastures. The owner, with whom I am well acquainted, knowing of the investigations

that I had made at the neighboring farm three miles away, called me in and suggested, "was not this similar to the cases that I had three miles away." I was only sorry in that case that we led the animal the distance we did. In doing so, in taking her away, we did so for sanitary precaution, and I think the exercise of going that three miles hastened her death; otherwise, we would have had some very valuable information and microscopical reports, but they corresponded with the pathology laid down on that subject. At this second farm, I have not heard of any subsequent deaths.

*Doctor Knowles* :—My attention was first called to this outbreak that I have mentioned, by seeing Mr. S's wagons stopping at so many places where diphtheria was prevalent, and it will be remembered that that was one of the most virulent outbreaks of diphtheria, and at almost every house that those wagons stopped at where they had children there was diphtheria, and nearly all of them had deaths.

*The President* :—The time has elapsed in which we can discuss this paper, and we will have to close, and I will name a committee to further investigate the case and report back to the convention in 1897.

On motion, the discussion was closed, and the President named as such committee Doctors Stalker, Gill and Lyman.

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[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

## FOOD—ITS USE AND ABUSE.

BY A. S. HEATH, M.D., V.S., BROOKLYN, N. Y.

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Food and protection are the primary demands of animal life. But as the former is the present topic of discussion it will receive sole attention here.

From 50 to 64 per cent. of the family income of working people is spent for food. And as economy is the source of wealth it behooves so large a purchaser of food to use reasonable economy. And in order to render some service, we indicate some economic items worthy of consideration.

The average expenditure for food of the working people of Germany is  $53\frac{2}{3}$  per cent. of their wages; of the English 51 per cent.; and of Americans  $58\frac{4}{5}$  per cent. The balances left must

cover the cost of preparing food, rent, clothing, and all other expenses.

It will be well then to study economy in the purchase of food. Is "the best the cheapest"? This motto may prove true in many respects, but it will not hold good in the purchase of food. The cheapest food is that which supplies the most nutriment for the least money. "The most economical food is that which is the cheapest and at the same time best adapted to the wants of the eater," says Professor Atwater. The food that brings fancy prices is not necessarily the most economical or healthful, though many people estimate values by prices paid. In this way too many sacrifice money to pride. If we look at food values we shall find that a quart of milk, three-quarters of a pound of moderately fat beef, and five ounces of wheat flour, contain relatively the same amount of nutriment. But their relative values are widely different. Though milk is the most perfect food for the young, it is not necessarily so in all the conditions of middle life. And though the old adage says "bread is the staff of life," yet, its nutritive elements are not in the best proportions for man or animals to live on. Nor is meat a perfect food, but meat, and bread, and milk, variously combined complete a diet containing the nutritive elements of foods, when properly combined, best suited to health and life, and best combined with economy.

The elements of which the animal body consist must be represented in the food consumed. The animal body is made up mainly of four classes of substances—water, ash or mineral ingredients, of fat, and of nitrogenous matters.

Water constitutes from 40 to 60 per cent. of the body, and is an essentially necessary part. Ash constitutes from 2 to 5 per cent. and is mainly made up from bones. The fat is the most variable in quantity and according to the condition of the animal it varies from 6 to 30 per cent. The nitrogenous or protein materials, represented in lean meat, white of egg, cheese, in milk, etc., forms from 15 to 17 per cent., and is found in the flesh, the skin, bones, muscles, internal organs, tissues, brain, nerves,

and all the working machinery—vital machinery—of the body.

Water, though not in chemical combinations in the animal body, nor in the food, yet, is as essential to the perfect performance of the animal functions as it is in the inter-oceanic commerce of the world.

"Blood and muscle, bone and tendon, brain and nerve—all the organs and tissues of the body—are built from the nutritive ingredients of food." Every movement of body or mind—thought, feeling, the sigh of sadness, or the emotion of love or affection—wastes the elements of body or brain; and this waste must be made up by a suitable supply of appropriate food.

The principal physiological uses of food are to form the material of the body and to repair its waste; to furnish heat to keep the body warm and the tissues supple, and to furnish muscular and mental power for the work of life. It is estimated that a pound of protein will furnish 1,860 *calories*, a pound of fat 4,220 *calories*, and that one pound of carbohydrates (starch), cellulose and such non-nitrogenous food substances—1,860 *calories*. This is a comparative estimate of the vital energy produced in different kinds of food elements. The French use the term *calories* as a standard unit of heat, or the amount required to raise the temperature of one kilogram (2.2 lbs.) of water through 1.8° Fah. and its equivalent in mechanical energy to 1.53 foot-tons.

Protein is the most expensive food element; and if the proportion is greater than 1 to 5 of carbohydrates in that consumed by man or animals, that excess is just so much waste. And this excess is productive of evil results if in excess of the demands of the animal system, and is productive of gout in man or founder in the horse, and many other evils, of which it is irrelevant to notice here, yet, I cannot refrain from quoting Sir Henry Thompson: He says: "More than half the disease which embitters the middle and latter part of life is due to avoidable errors in diet, \* \* \* and that more mischief in the form of actual disease, of impaired vigor, and shortened life accrues to civilized

man \* \* \* in England and throughout central Europe from erroneous habits of eating than from the habitual use of alcoholic drinks, considerable as I know that evil to be."

The proper proportions of food elements, the amount required, the palatability, digestibility and assimilability, of these has very much to do with the usefulness and economy of human and animal foods.

*(To be continued.)*

## NAVICULAR DISEASE (NAVICULAR ARTHRITIS).

By H. S. DRAKE, OF VIRGINIA.

A Paper read before the Virginia State Veterinary Medical Association.

The veterinary profession is indebted to Mr. James Turner for a knowledge of the seat and cause of the disease known as Navicular Arthritis. He first alludes to it in the year 1816, and though eighty years have rolled away, little has been done since his day revealing new pathological or even etiological changes or discoveries.

*Etiology.*—We comprehend more fully how navicular disease may be caused when we recall the peculiar anatomy of the parts involved in the process, and the function that is performed by locomotion. The anterior extremities have the bulk of the body weight to bear, and their support is by elastic sling muscles which bind the shoulder to the body, thus greatly dissipating the shock to the foot. Then the foot is composed of elastic material throughout, protecting the sensitive structure, but even this is not sufficient of itself to protect the foot from injury, so nature has further provided for exigency by placing the coffin joint on the posterior part of the coffin bone instead of directly on top of it, whereby a large part of the shock of locomotion is dispersed before it can reach the vertical column represented in the cannon, knee, and arm bones. In addition to these provisions the frog, plantar cushion, flexor tendons, interarticular cartilages and connective tissue are interposed to break the concussion and shock.



Such are the means provided for dispelling the shock to the joints and vertical bones, and ample as they seem to appear they, nevertheless, fail to relieve the parts from concussion and excessive pressure of the sensitive structure within the hoof, due to rapid pounding over hard surfaces.

Hence there arises a bruise of the navicular bone, the bursa in connection therewith and the perforans tendon, and the disease is chiefly found in those animals that are high knee actors or rapid pace makers.

Professors Smith and Law differ as to the class of horses among which it is most commonly found.

Smith says, "It is rare in racing, hunting, and even in trotting horses, so long as they are used on the turf."

Law says, "The thoroughbred is more commonly affected with the disease than any other."

But the fact is that beside the exciting causes, must be considered the predisposition in individual animals, most prominent among which are heredity, and vice of conformation, and added to this the environments of domestication and use, such as dry stables, *i. e.*, board floors in stables, hard and fast work, bad shoeing, and puncture wounds.

Mr. Turner writes: "Contraction mostly takes place in animals that have been accustomed to be shod before the age at which they have attained their highest value for work, viz., five years, but this contraction is not, however, necessarily connected with lameness. The next deviation from nature is the passive state to which the foot is subjected for 24 hours, and sometimes several days. Compare this with the few hours during which a horse in a state of nature, that is, roaming at will in the pasture field, is in a quiescent condition, and there will be no cause of surprise in the change of form, position, character and the state of contraction which takes place in the foot deprived of its natural pressure and motion. The first consequence of contraction is the gradual displacement of the os navicular and os pedis bones; they ascend within the hoof, and an unnatural arch is formed by the ascent of the frog. The delicate synovial mem-

branes lining the joint are crushed and bruised by the very material which nature had bestowed as a defense."

We learn from this writer that the bruising of the synovial membrane lining this joint is the veritable source of this disease, it is engendered in the stable, but becomes permanently established by sudden violence out of it. Horses doing fast work on our hard roads, and those subject to the whims of fashion by being trained to high knee action are the ones that suffer most from this dreaded disease.

From the time of its discovery, Turner shows conclusively that he was acquainted with the cause of navicular disease, and its pathological changes.

*Symptoms.*—In the early stage the symptoms are obscure. The animal may be taken suddenly lame for a few days and then the lameness may entirely disappear for a short period, only to reappear in a more violent form, which finally becomes constant and aggravated. In the primary stage there may be heat about the base and posterior part of the foot. But in some instances there is no perceptible change in the temperature about the parts. One of the most characteristic symptoms is pointing of affected foot when at rest, and clean appearance of limb due to atrophy of muscles from imperfect use. This may be seen before the lameness is manifested. The affected foot always takes a short step and the toe of the foot first strikes the ground, so the shoe is most worn at that point, shows a stumbling gait, and when both feet are affected at the same time, shows a stilty movement, as though he had both legs tied closely together. When made to work shows much pain and sweats profusely, also shows much pain on pressure over the seat of disease. There never was yet a philosopher who could withstand a toothache, but think of a poor horse with 20 toothaches compressed into one agony. The leg is bent with difficulty and with pain, owing to the flexion of the perforans tendon upon the navicular bone. The process of this disease is mostly inflammatory, followed by ulceration, necrosis, or ossification of the bones of the coffin joint. If the disease is of long

standing you will have marked contraction of the horny substance of the foot.

*Prognosis.*—Prognosis of this disease is very unfavorable in cases of long standing owing to its destructiveness to the joint and its membranes involved by this disease.

*Post-mortem.*—Numerous dissections have shown that the navicular bone and tendons forming that joint, are invariably the seat of this obscure disease. The cartilage of this joint has been found in an ulcerated condition with the bursal membrane destroyed; the bone showing caries in bad cases, and in others bony adhesions have taken place in the joint formed by the navicular bone and the os pedis, and in a few cases the foot has become disorganized and useless by the ravage of this terrible disease.

*Treatment.*—Nothing has yet been found by the profession to be a cure in an established case of navicular disease if disorganization has taken place. But many would have us believe that they have the sure and only cure. But in cases where a cure has been effected it is certain that disorganization has not occurred in the parts affected. We have a number of palliative remedies, that are in vogue to-day, of which neurotomy stands at the head, and is mostly resorted to by the profession in city practice. The common remedy to relieve the suffering animal is had by paring the foot well down, rasping the walls at heels thin, then placing in a tub of medicated water for a few hours soak each day until a new growth is established; this may be carried too far by getting the foot spongy, which must be avoided. The soaking is followed by a good blister around the coronary substance. After the action of the blister has subsided, an expanding spring placed in the angles of the heel, and shod with light tips and turned out on a meadow bottom for a period of rest is a common treatment.

It only remains to be said that in all well-regulated stables care should be taken to keep the horse standing with his front feet resting on clay, or in the absence of clay to stuff the feet periodically with flaxseed poultice or clay mixed with vinegar.

To give regular exercise, and to avoid severe usage on hard roads, and frequent careful shoeing.

## HYPOSULPHITE OF SODA IN TETANUS.

BY M. J. JONES, V.S., CUBA, OHIO.

Having followed the profession for a livelihood for more than a score of years, I have concluded to give you my experience in the treatment of that too-often fatal disease, tetanus. In doing so I cannot help feeling my inability to handle the subject in a masterly way. But, nevertheless, experience is experience, and I have not only had experience, but have assiduously perused every particle of literature that I could possibly obtain on the subject of veterinary medicine and surgery. Therefore, I feel that I might be able to entertain your readers for a short time.

After carefully studying White, Mayhew, Dadd, Percival, Youatt, and other works of their day, I commenced treating tetanus by venesection and catharsis, counter-irritants along the spine, followed by powerful antispasmodics and sedatives. Consequently, I had to bear the chagrin of seeing a large proportion of my patients go to the bone-yard. I continued this course of treatment for several years, with no other consolation than the queries arising in my own mind: "Who knows more about the treatment, and who can find out sooner than I can?" But after a series of failures, followed by disappointment and disgust, the writings of Robertson, Williams, Dun, Law, Liautard, Greene's "Pathology and Morbid Anatomy," Pasteur, Koch, and other modern writers came to my notice, and were devoured with avidity. Soon light dawned upon the horizon, and success followed my efforts. I was glad to know that with the aid of modern science I could in a large proportion of tetanic cases relieve the poor dumb animal from his sufferings and bring about a favorable termination. After reading Prof. Robertson on the subject where he says: "On this hypothesis the true cause of tetanus is regarded as some morbid agent which,

being received into the animal's system, finds its way through the blood to the spinal centres, for which it has a special affinity, there distributing by mal-nutrition its normal dynamic action." I began to see what I had long suspected, that the disease was not caused by pain, as we had been taught heretofore, and that it could not be cured by antispasmodics and sedatives, and that counter-irritants or any other agent that caused the slightest pain was harmful. I then became satisfied the disease was caused by a germ and began to look about me for some germicide or bacteriacide which could be conveniently administered without exciting the patient. This I found in hyposulphite of soda. I also found that the impure blood had a very bad effect on the nervous system. Therefore, while we are purging the blood of the bacteria we must also look after some nerve sedative to control the nervous system, which we readily find in bromide of potassium. Now, let us see what we have been able to do by this line of treatment. I have 34 cases on record treated with the above medicinal agents; 23 of these patients made a *perfect* recovery and are living and performing their usual labor. (This includes all cases treated with these remedies.) It would occupy too much of your valuable space to describe all these cases, but I will favor you with the particulars of one or two. Therefore, I will proceed to give the *modus operandi*.

On July 30, 1893, I was called to see a bay filly, four years old, well-bred and belonging to a Mr. H., living some eight miles from my office. On arriving at his place of residence found the patient very stiff, with nose protruding, tail slightly raised, membrana nictitans covering a portion of the eye, locomotion considerably impaired, walking almost without bending the joints, temperature slightly elevated, pulse normal (excepting when the paroxysms came on, which was only when something frightened her). Diagnosed tetanus and called for history. Was told the animal was perfectly well until two or three days before, when a slight stiffness was noticed in posterior extremities, which gradually increased until the present time.



Asked owner concerning any injury ; was told there had been none, first symptoms appearing while in pasture. On examination found a slight cicatrix at the point of shoulder. On inquiry found she had had a trivial injury at this point in the month of May previous, which had healed readily by the application of a little axle grease. I expressed my opinion that this was where the trouble began, which was received with a certain amount of incredulousness. On looking about, I found a small stable entirely isolated from any other animal of the equine species. With very great difficulty we got the animal to this building. Upon examination I found the incisors open perhaps one-third of an inch ; bowels very much confined. Gave potassium bromide,  $\mathfrak{3}\text{ij}$ , in a gallon of cold water, which she swallowed in the course of an hour by sucking it through her teeth ; scalded three pints of bran, and one of oats, and put it where she could have access to it, and left orders for no person to enter the building, but to give small quantities of fresh water every three hours, with bromide,  $\mathfrak{3}\text{j}$ , to be put through a hole in the wall opposite the manger. Left hyposulphite of soda,  $\mathfrak{3}\text{ss}$ , to be given at one dose in the evening.

July 31st called again, and found all the symptoms aggravated ; had not partaken of any solid food ; owner badly discouraged. Gave him a sedative in the way of nice talk and gentlemanly treatment, interspersed with a few stern commands. On examining patient, found the bowels had not moved, nor could I find any indications of urination ; substituted skimmed milk with oatmeal gruel for the water ; gave bromide same as previous day ; gave two doses of hyposulphite instead of one during the 24 hours ; paid no attention to bowels or urinary organs.

Called again on Aug. 1st and found no change for the better ; owner quiet and submissive. Continued treatment, and on the third or fourth day found signs of urination and slight defecation ; patient standing obdurately in the same position ; gradually decreased the bromide as the nervous symptoms disappeared, but continued the hyposulphite, giving a dose of the

bromide when there was any nervousness noticed more than usually. On the last of second or first of the third week noticed very great tension of the epidermis, so much so that it was almost impossible to notice any motion of the abdominal walls in respiration; slight tumefaction of superficial lymphatics, with very great irritability of animal when the hand was placed on the epidermis. Continued hyposulphite in  $\frac{3}{4}$  ss doses, increased diet by adding more oats and a pint of middlings or shorts.

On calling again in a few days found swelling of lymphatics nearly gone, with yellow, gummy, aqueous substance oozing from the surface; bowels relaxed, fæces taking on a normal appearance, appetite good, locomotion improving, coat of hair slipping, being replaced by a fine glossy coat; still considerable irritability, so much so that the animal had to be watched continually to keep her from injuring you while in the stable. On calling again found the patient liked to be rubbed on the neck and shoulders, but very irritable on the posterior extremities. Animal continued to improve from day to day until she enjoyed two or three good rubbings with comb and brush each day. She made a perfect recovery in forty days from time of attack, standing obstinately on her feet for over thirty days and coming out without a scar or blemish, with a fine coat of hair and apparently weighing at least 100 lbs. more than when attacked.

Now, this is almost an exact description of all the cases treated with this medicine. But, with the indulgence of the editor, I will describe one more case, in which there was no bromide used (excepting one dose).

On Sept. 11th, 1895, was called to see a sorrel draft filly, two years old. When I arrived the owner told me that the animal was stone blind, that she had fallen over the fence into the road and tried to follow his mother-in-law and two children, who had started to town in a road-cart, but that she could not see and had fallen over the occupants of the cart, causing slight injury to the woman and children and demolishing the cart. I found her in a very excitable condition, nose protruding, mem-

brana nictitans covering more than half the eye, nostrils dilated, respiration greatly accelerated, animal constantly on the move, head and tail erect, joints so stiff that they scarcely moved when walking, excitement so great that it was impossible to take temperature without causing animal to fall. The history was that she had the sole of her forefoot punctured some two weeks before, which was treated by the smith. I secured for her a box-stall, with board floor; thoroughly cleansed the walls and floor washed with carbolic acid  $\frac{1}{2}$  ss, aqua Cv. With difficulty got the animal into this stall, where there was plenty of fresh air. Gave bromide  $\frac{1}{2}$  ss, in drinking water, watched patient until partially quieted, then tried to take pulse and temperature, but the animal became so excited that I desisted; left hyposulphite of soda,  $\frac{1}{2}$  ss, to be given at night. Called on 12th and found patient quiet; had taken medicine well; trying to masticate a few corn blades; limbs swollen; no defecation; had taken some nourishment in the shape of sloppy food. Owner very much discouraged, wanting to destroy animal; gave kind advice to owner, with some explanation, which seemed to have the desired effect; ordered stall disinfected daily; tried to examine wound, but failed on account of stiffness and excitability. Continued hyposulphite,  $\frac{1}{2}$  ss; aqua, Ci, to be given *ad libitum* until  $\frac{1}{2}$  iss had been taken in the twenty-four hours, with orders not to force any medicine or food on patient but to let her take nourishment and medicine at will. I then left, with a determination that the patient should have no medication but *hyposulphite of soda*.

Called on 13th, and again found patient with extremities much more elevated, had not moved her feet an iota, had refused her medicine and had partaken of very little nourishment. Bowels had not moved, but slight indications of urination; ordered stall sprinkled with carbolic acid solution, fresh food and medicine kept constantly by her, and left, wishing I had studied for the ministry. On 14th returned, with grave doubts as to condition of the patient; was told she had taken all the medicine offered her, also a quantity of sloppy nourishment; limbs

swollen to body, stopping abruptly in a large roll at the stifle, extending along the surface of abdomen, tension of epidermis very marked; had not moved a peg and could not move. This tension continued several days, and disappeared by the pores of the skin, oozing as a gummy, watery substance. All over the superficial muscles could be seen pills from the size of a pea to that of the ball of your finger. Animal shed the entire coat, as in the former case, commencing at the anterior extremity. Hyposulphite still continued, with slight intermission of one day or night, when she refused to partake of it; same irritability was present as noted in all the cases treated (noticeable just before exudation and exfoliation). Animal made a perfect recovery in four weeks, standing stock still for three weeks. Was informed by owner that she thrived better than she had ever done before, as she had been troubled with intestinal vermin nearly all her life, but was perfectly clear of them ever since her sickness. The patient took no medicine but hyposulphite (excepting one dose of bromide).

I will not intrude any longer on your readers, unless requested by the editor to furnish particulars of other cases, but will close by stating that I have tried morphia, atropia, physostigma, hydrocyanic acid, venesection, and catharsis; have brought the barbaric sling into requisition, but my efforts have been a failure until I commenced the use of hyposulphite of soda. Nor have I failed where there were no sanitary precautions taken, for I have treated traumatic tetanus in old log stables with clapboard roofs that had not been cleaned out or disinfected for years, the poor animal standing in filth nearly to his fetlocks, with the rain dripping on him, with no one to administer to his wants but the patient housewife (the husband being entirely disgusted and refusing to lend a helping hand). But with time and the aid of hyposulphite have been able to bring about a perfect recovery. All the cases I have lost have died in the first seven days, when the animal could not be induced to take enough medicine to have the desired effect on the blood, or by accident caused by the carelessness of the attendant.

Now, Mr. Editor, if hyposulphite of soda is not the *best* remedy for tetanus, nature must be a great physician. "It is good for us to reason together." As I said in the beginning of this article, I have not had the benefit of a classical veterinary education, nor have I consulted personally with other veterinarians, but have fought the battle out, with no other assistance than my patient in the field and my library in the office (which is as elaborate as my means will permit of). But I have arrived at the following conclusions: that the hyposulphite has some specific action on the blood that destroys bacteria and forces the impurities to the surface, thereby engorging the capillaries and compelling them to relieve themselves by exudation, for in no case that I have on record has there been any engorgement of the limbs or capillaries until after the hyposulphite had been given, and in most cases not until several ounces had been administered.

Now, brother practitioners, some of you study out a plan to support life until we can get an action from the hyposulphite, and we have the disease under control.

Hoping that my readers who have had the advantage of a broader education than I will look over my errors, and pardon my presumption, I will await your judgment.

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## FIGHTING TUBERCULOSIS IN VIRGINIA.

By W. H. HARBAUGH, V. S., RICHMOND, VA.

Address to the Virginia State Veterinary Medical Association.

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GENTLEMEN:—In retiring from the presidency of this association which I have held continuously since its incipency, I must express my satisfaction on two particular points: the first is that I have earned a rest, and the second is that during my terms of office we have accomplished all that we have undertaken for the advancement of our profession in this State.

To the set of officers who will to-day succeed the present incumbents we give a complete and smooth working machine which has been a power in this Commonwealth, and which



should continue to be a power, increasing in strength and influence as numbers are added and as years roll by. It is almost incredible to think that this present association with its present membership sprang from the handful of veterinarians who met in my office not quite two years and a half ago for the purpose of taking some step to check the incursion of the quacks with diplomas, and with the determination of doing what we professed to be able to do. Four of those six who organized this association are still with us; they may be truthfully called the "old guard," they are here to-day, and they have never failed to attend a meeting since we met to organize. No matter where the meeting was held, whether up in the mountains in the extreme western part of the State, or down here by the sea-shore in the extreme east, these same earnest men have been on hand to contend for our personal rights and professional privileges. They recognize the fact that membership in this association is not a mere name; they fully realize that this association is a State institution, and made such by the State legislature, and that membership in it is a responsible position, and now it is to be seen whether or not others have the courage to sacrifice time and money to carry on the work so well begun.

While it is true that pleasant social features have had a prominent place at all our meetings, still we are not banded together for mere social pleasure. We were incorporated by the legislature to elevate the standard and advance the interests of our profession. We were made a State institution with a duty to perform to the people as well as to ourselves, and here the question may well be asked: Have we performed that duty? In reply we can proudly point to the laws of our State and say we have.

In a little more than two years we have accomplished much. Our calling has been uplifted from its past degradation and put on an equality with the other learned professions; we are now recognized and legalized.

Questions in regard to contagious diseases are now referred to a member of the veterinary profession, instead of to the honest farmer, political granger or a jury of laymen.

What we have done is done well, but our whole duty is not yet done. We have a gigantic undertaking on our hands in our efforts to secure local dairy inspection for the different cities throughout the Commonwealth. We have to fight a monster which stretches forth its arms in all directions and clutches within its grasp all who can be controlled by fear, favor or value received, and this monster is the wealthy breeding interest which makes a hobby of high-priced pedigree cattle until it tires of them and then unloads them on the unsuspecting dairyman to infect his smaller herd with tuberculosis.

Even from our standpoint there are two sides to this tuberculosis question. The first is the public health, and I care not whether a man believes there is much or little danger in using the milk or flesh of tuberculous animals through risk of transmission of the disease to the human being, it is certain that such milk and flesh should not be used. Milk is a part of the cow and therefore animal matter, and if the cow is tuberculous her milk is part of a diseased cow; it makes no difference how much it is boiled it is still part of a diseased cow, and should not be used for human food. The same proposition applies to meats from tuberculous animals, no matter how thoroughly sterilized; and it disgusts me to hear our would-be veterinary politicians talk of using such meats the same as they do for the lower classes in Europe, when we have meat to spare for the world. No, gentlemen, we are not in Europe, and do not have to devour diseased products to prevent starvation. Let us be consistent and fight against diseased animal products being used as human food. Another thing that surprises me is that there are veterinarians occupying high places who have the insufferable gall to tell us that milk from tuberculous herds when fed to pigs does not produce the disease in them and that there is little danger of its producing disease in the human being! These are breeders' opinions, whether uttered by veterinarians, agricultural journals, or other hirelings. No man who sees the post-mortem lesions of a few tuberculous dairy cows wants milk from any such animals in his house—danger or no danger.

The other side of the question is the dairyman's side; we should protect him also while we are endeavoring to protect the public, and warn him against purchasing thoroughbred cows to increase the richness of his milk simply because he can buy the cow cheap. It would have been much better for all concerned if the price of the thoroughbred cow had remained high and beyond the reach of the average dairyman, for in that case there would have been an inestimably less amount of tuberculosis among our common cattle.

When I opened up this present campaign against tuberculosis I was well aware of the fact that I was sacrificing money, practice and some friends; I knew that I was exposing myself to unjust criticisms, abuse and falsehoods, but it did not deter me; I have waged the war now for more than two months and the result is that the public is acquainted with facts they should have known long ago, and the great majority is on our side and is demanding what we are contending for, and if I am not a false prophet we will have it in the very near future.

This question involves very hard work, but after what we have already accomplished nothing should be considered too hard to attempt, and if you go at it earnestly we will succeed. My plan has been to force the question in season and out of season and make an object lesson on every possible occasion.

When we have forced the institution of local dairy and meat inspection the breeders and dairymen will be only too glad to help us to force the State to make sufficient appropriation to make an effort to stamp out the disease, or at least to check its spread, and when a sufficient number of States go into the question it will soon be discovered that the question is a national one, and the national government will have to take hold of it and handle it after the manner in which pleuro-pneumonia was handled, and the sooner such a step is taken the less it will cost the nation.

Mention should be made of the splendid work done by our efficient State Veterinarian; many of you are aware of the stand he has taken in this war; he has put his shoulder to the wheel

and has kept it there in spite of all the threats and bluff of the opposition, and when our work is crowned with success Dr. Niles will come in for his full share of credit.

Now, gentlemen, I desire to warn you that we have stormy times ahead. Vigorous attempts will certainly be made to have our examining board law amended or repealed, and we must be on the lookout so as to be able to counteract every such attempt even before it is made, if possible. We have already received notice that the law for the control and prevention of contagious diseases will be attacked and we must never lose an opportunity in making friends for it, for you may rest assured that it makes an enemy of every man who suffers by it. We must look to the officers of the association to guard its interests, and we will hold them responsible for any neglect.

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## AN ANOMALOUS DISEASE OF THE HORSE.

BY T. B. NEWBY, V.S., PANA, ILL.

A Paper read before the Illinois Veterinary Medical Association.

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At the request of our worthy State Veterinarian, Dr. Trumbower, I will give a brief description of a disease which for want of a better name we will title under the generic term of "anomalous." And to me 'tis a very anomalous one indeed. My first experience was in January, 1895, in a few sporadic cases in Christian County, but, beyond a death or two of inferior animals, no great loss was experienced, until February, 1896, when an outbreak occurred in Shelby County, alarming the horse owners of the community, owing in some respects to bearing a resemblance to glanders. I will mention one farm which I visited; the cases and circumstances found there will offer as citations to serve my purpose, as they were a fair type of the cases coming under my notice. The horses on this farm were divided into two lots by a public highway; one lot on north side of road running in woods pasture, receiving corn twice daily and corn-fodder; were quite healthy. While those south of road, with

same surroundings, except receiving straw *ad libitum* from an old straw stack, grown during the extreme drouth of 1894, were all sick; two having died, and two more shortly after.

*Symptoms.*—Beyond a dull, listless appearance, there were few outward signs of suffering, except in an occasional case just before death, many dying without manifesting signs of deep distress. Upon approaching an animal, you would be greeted by a most offensive odor of decomposition, worse than gangrenous pneumonia, the odor coming from a sero-sanguineous discharge from one or both nostrils. Patches of petechiæ were present on the septum nasi; sub-maxillary glands slightly enlarged and indurated; a weak ramolescent pulse, ranging from 60 to 80; temperature from 102° F. to 106° F., constantly increasing in fatal cases. Appetite good in most cases.

*Post-mortem.*—Upon exposing air chambers, a dark gangrenous condition of nearly the entire surface of the superior maxilla was presented. Near the base of the ethmoid was a clot of blood with visible signs of a recent hæmorrhage. Lungs nearly normal, otherwise than cedematous. Liver badly congested with venous blood and bile. Kidneys to a casual appearance quite normal. Spleen, semi-fluid owing to the rapid blood changes. Stomach and bowels, to my surprise, seemed practically normal, and all signs of mycotic influences absent, as the ante-mortem symptoms indicated.

*Etiology.*—In every case coming under my care I believe the cause to be a specific one contained in the straw; but I do not believe it due to the white muscardine fungus affecting chinch bugs, but rather to a germ from the soil, developed by the extreme drouth, during the summer of 1894; then the growing crops of the sections mentioned were prematurely ripened; yet, what form and how communicated it is not my purpose to speculate.

*Treatment.*—Discover the source, and remove it. Give bran mashes with oil cake once daily. Oats or corn with hay. Heroic therapeutics are unnecessary. Glycerine as a basis with campho-phenique, applied locally, and may also be given inter-



nally to arrest the fœtor with advantage, with possibly, in many cases, quinine in full doses.

In closing I will say I do not consider this disease of very great importance, but rather the circumstances influencing it, viz., the extreme climatic period, which has been such a menace to agriculture, and so hazardous to the live stock interests in some sections of Illinois the past three years.

## REPORTS OF CASES.

### PUNCTURED WOUND IN PELVIC CAVITY.

By W. F. DERR, V. S., Wooster, Ohio.

A boy of 14 years brought a bay mare, aged six years, to my infirmary, telling me that she would not eat, etc. I made an examination of her, and found the pulse 60, somewhat angry; temperature,  $105\frac{1}{2}$ , respirations about normal; seemed to suffer some pain. I looked her over carefully, and asked all the questions I thought necessary in order to make a diagnosis, but could get but very little information from the boy. He told me he had been riding her to a country store on the evening of the 18th, and that she had eaten all of her feed until last evening, during the night and this morning. There was some stiffness in the lumbar region on moving her, but examination over that and the abdominal region failed to reveal enough to make a correct diagnosis. I told my barn-man to put her in a box-stall, and in about half an hour I again made an examination. She stood in about the same place where we had left her. On approaching her about the flanks she seemed to have some fear, and would cast her head around toward me. I certainly looked her over carefully and had to make up my mind that I could not diagnose the case correctly. I therefore concluded to treat symptoms, and wait for further developments. I feared peritonitis; therefore, gave a dose of opium and calomel at the time. In four hours ordered her to have small doses of aconite and belladonna, with quinine, gr. xx. Being very busy at the time, and would be away most all of the day, this treatment was continued until the 21st. After again looking her over and finding the pulse about 60, still angry, temperature  $104\frac{1}{2}$ , respirations normal, unless I would manipulate her flanks, which would increase them, I had my man lead her

out of the stall ; she walked stiff and drawn up ; seemed to have pain in the lumbar region ; yet examination revealed nothing. She had not defecated during the night. I therefore had my man to give her a rectal injection of warm water, and gave about the same internal treatment as I had the day before, and again left to make my calls. On returning the man told me in giving her the injection it seemed to pain her ; and that when she passed feces she backed up to the wall. I thought I should now find out what the trouble was with her. Examination per rectum revealed a rupture of the mucous membrane about three inches in length, about the middle of rectum, on the right side, with a clot of blood, which I removed ; washed out the cavity with solution of carbolic acid, etc. The thought struck me at once, how could this have been done without there being any hæmorrhage ? The boy seemed to know nothing about it. When he returned in a few days to find out the condition of the patient, I took him to task about it, when he admitted that a shaft had penetrated her rectum, and had not caused an external injury that was visible. He also admitted that there was some hæmorrhage that evening and the next morning, but that he had cleansed the parts, etc. The reason for not revealing it was fear of punishment from his father. In running a race with another boy having a horse hitched to a sulky of the old-fashioned high kind the shaft penetrated the rectum.

I gave her laxatives, anodynes, and washed out the wound well with antiseptic solution, so that in three weeks time I sent her home cured.

I write this not for what the case was, but how a wrong diagnosis could be made by not having a history of the case, and by my not making a rectal examination of it at my first observation. I certainly was taught a lesson to always make an examination of these parts when all other signs failed, and hope my experience will be a benefit to some of the young members of the profession.

#### A CASE OF SUBNORMAL TEMPERATURE.\*

By W. H. HARBAUGH, V.S., Richmond, Va.

Oct. 4th, 10 P. M., a chestnut gelding was brought to my hospital with symptoms of aggravated heaves. Owner had noticed the abnormal breathing and cough for the past three weeks, but never saw the horse in such an alarming condition as he

\*Read before the Virginia State Veterinary Medical Association, June 24, 1896.

found him this night. Owner stated that the food was good, so far as he was able to judge. I attributed the condition to either an overfeed, or feed of bad quality, and administered a bolus composed of aloes, bicarbonate of soda, and creolin; I also gave on the tongue a dose of fl. ext. cannabis indica, to allay the cough, which it did in a short time. Owner said that the horse had been worked to buggy very little each day for some time past. Horse was taken home.

Oct. 5th. Horse brought back about 8 A. M., still heaving very much at flanks, and with a new complication in the form of violent spasms of the diaphragm. On taking the temperature I was surprised to find it  $95.4^{\circ}$  F. Thinking there might be a mistake, I took it again, with the same result. I ordered alcoholic stimulants, and gave a dose immediately. Horse taken home again.

Oct. 6th. Horse brought back at 9 A. M. He is bright and cheerful, showing no signs whatever of any ailment. Temperature, with same thermometer  $100.2^{\circ}$  F. Prescribed a course of liq. acidi arseniosi, and gave proper directions in regard to feed and water.

The animal returned to his usual work and is doing well. The only explanation I can offer for this remarkable subnormal temperature is the severe shock to the nervous system by the derangement of the digestive functions. Physical examination failed to discover any organic disease of heart or lungs. An extended experience with creolin in an aloetic bolus, both before and since, convinces me that it was no factor in reducing the temperature.

#### A SINGULAR CASE OF TUBERCULOSIS IN A COW.

By JOHN MINCHIN, V.S., Goshen, N. Y.

On August 4th, I was called to the farm of Mr. S., to look over his dairy of fifteen cows, some of which he said were not doing as well as they ought to under the circumstances. After looking over the herd, I made a physical examination, and, to my surprise, found no less than five suffering with tuberculosis. Their owner was somewhat surprised when told of my finding so many, for he did not think there might be more than two, which he had pointed out, saying that they were failing in both milk and flesh for quite some time. Three of the five were in fair condition, while the other two, and especially one, were visibly affected. I advised their immediate destruction (that afternoon), which he complied with.

*Symptoms.*—One of those two cows was in better condition than her companion; gave a good quantity of milk, and had no cough; but her eyes were quite watery, which resulted in pus. On the carcass being opened, the whole internal organs were literally covered with tumors (from the size of pinheads to that of a hand ball). The lungs were almost covered with them.

Now, we come to what we term the singular case. This cow although giving quite a quantity of milk, was very low in flesh, had a dejected appearance, and was troubled with a very bad cough, which on the least excitement troubled her. This cow was eight years old, and two years ago we became suspicious of her, and told her owner so at the time. When this body was opened and exposed to view, the internal organs appeared like the other cow's, only more diseased, on account of the size of tumors; but, on inspecting the lungs, to our great surprise and astonishment, not a single tumor or lesion could be found; but, on the contrary, a lung that the uninitiated would term sound. Do what we could, there was not a vestige of the disease apparent to the naked eye. The lungs were very dark, hypertrophied, but on the least pressure with fingers, would collapse. We have seen many cases of tuberculosis in our practice, but this case is the most singular of all.

As the government authorities have no funds for the payment of such cases in our state, the other animals have, we suppose, found their way to the city, where many like them are sure to go, where they are sold as food for anything obtainable.

#### ABDOMINAL ABSCESS.

By WM. N. COLMAN, V.S., Sterling, Kan.

On the morning of June 6, 1896, I was called to see a bay mare used for driving purposes. The owner stated the case to me as follows: She had not been well for three or four days, showed signs of colic, had had colic three times in the past month, but had got over it all right, and was apparently well until three days ago, when he found her, I supposed with the colic; had considerable pain, which stopped in a few hours. He noticed a swelling on her right side. The mare's appetite had not been good for some time. He thought she was pregnant.

On arriving at the place I made an examination, and found the pulse and respiration accelerated, temperature 105° F., cutaneous surface quite warm, and extreme sensitiveness was observed by spinal pressure at the lumbar region; the visible

mucous membranes were somewhat injected; urine and faeces of a febrile character, and I found her not be pregnant, as was supposed. A rectal examination revealed a large immovable object, which I diagnosed as a tumor, the nature of which I could not ascertain. The patient was very weak, taking but a very little nourishment for some time previous.

I prescribed stimulants to be given every hour during the day, and said I would be back the next day and operate on her. On my arrival the next morning I found her pulse soft and weak, respiration normal, temperature  $98^{\circ}$  F. The whole abdomen was augmented in size, the tumor doughy, and pitting on pressure. I explored it with a small trochar and canula and obtained a small amount of purulent pus, and then I made an incision at a point a little below the xyphoid cartilage, which relieved the patient of 8 quarts of very foetid purulent pus. The cavity was then washed out, and cleansed antiseptically. I prescribed a stimulative draught to be given during the day.

On my arrival the next morning, I found the mare much better, had eaten a warm bran mash in the morning; the pulse still soft and weak, respiration normal, temperature  $98\frac{4}{5}^{\circ}$  F. I dressed the wound with

Peroxide of hydrogen  
Aqua destillate  $\bar{a}\bar{a}$   $\bar{z}$  iv

and left orders for them to dress the wound twice a day with the above.

The profuse oedema of the pectoral, abdominal and inguinal regions were readily resolved; the cavity continued to discharge for a short time, and the healing process was very rapid. On August 12, I saw the mare and she was sound and well and doing her usual work.

I believe it to be the largest abdominal abscess I have seen in my limited practice, and made the most complete recovery in that length of time.

#### STRICTURE OF URETHRA.

By J. B. HOLLENBECK, V.S., Rock Valley, Iowa.

On May 15, a black gelding was brought to my infirmary suffering great pain and straining hard to urinate. Owner said the horse had not passed his urine properly for about ten days, it only coming away in drops. On examining per rectum I found the bladder so full that it filled the pelvic cavity. Being unable to pass the catheter any further than the arch, I concluded there must be a calculus obstructing the passage. Im-



mediate relief being necessary, the animal was cast and the parts cleansed, and a four per cent. solution of cocaine injected over the end of the catheter which had been inserted. After cutting down onto the catheter I discovered a stricture of the urethra, which only permitted the passage of a very small probe. I then dilated the stricture with my finger, which took considerable force, when urine escaped very freely. The bladder was then washed out with warm water, and the wound dusted with boracic acid and iodoform, once daily for two weeks, when the wound was healed and the animal appeared all right. The owner took him home and turned him in pasture. In three days he came back, worse than before I operated. It being late, and not wishing to operate by lamp-light, I punctured the bladder with a trocar and canula through the rectum, which relieved him until next morning, when I chloroformed him and repeated the operation. After dilating the urethra I inserted a silver tube, holding it in place with silk sutures through the edges of the wound, leaving it there for ten days, and washing the parts with a solution of carbolic acid, and kept parts below well covered with vaseline to prevent urine irritating legs and sheath.

At the end of ten days the tube was removed and parts dressed daily with boracic acid and iodoform, the catheter being passed once daily. At the end of the next week the stricture was again closing, so it was difficult to pass the catheter, and the outside wound being completely healed, I secured a steel wire (No. 9) and had a blunt point soldered on it, the size of the urethra, and passed that once a day for five days, then every other day for a week. The horse urinating then normally, I sent him home. He has since been doing his work without any inconvenience. The horse being otherwise healthy I gave no internal treatment.

#### STRINGHALT IN RIGHT HIND LIMB.

By W. H. CURTISS, D.V.S. Marengo, Ill.

About May 1st I operated on a large black horse for stringhalt, by removing about half an inch of the peroneous tendon, operating close to its union with the extensor pedis. The horse was turned into a pasture for two months. When taken from the pasture was sound, and has been worked every day since with no return of the trouble. This was a case of two years' standing and very severe.

## SALIVARY CALCULUS.

By W. H. CURTISS, D.V.S., Marengo, Ill.

August 22d, 1896, I removed a salivary calculus from Steno's duct of a horse. It was as hard as stone, and of the following dimensions: length,  $2\frac{1}{2}$  inches; circumference, 2 inches; weight, one ounce. I removed by operating through the mouth.

## SOCIETY MEETINGS.

## UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The thirty-third annual meeting of this association convened on Tuesday morning, September 1st, at 10.30 A.M., in the lecture-room of the University of Buffalo, Buffalo, N. Y., with the President, Dr. Hoskins, in the chair, who introduced Acting Mayor Boeckel, who made a very happy address to the members, extending a most hearty welcome to the city, touching intelligently upon the great work which the profession is accomplishing in the field of sanitary medicine, finally offering them the freedom of the city. Prof. Osgood, of Harvard, responded on behalf of the association, in one of his usual fine efforts, after which the Convention was formally thrown open for the transaction of the important work upon the long programme.

The President then read the following address:

*Fellow-Members and Colleagues:*

This thirty-third annual meeting which has drawn us together at this time from so many points of our much loved country, and which has added another year to our association's history, another link to the chain that marks off the era of growth of our profession at home, dates a peculiar period in the history of our avocation. For many years we have followed in all lines the footsteps of the older nations of Europe and with a keen eye watched their progress and scanned their results that we might employ them for the good of our own people; but to-day we note the changed aspect of affairs and discern the eye of the old world following the pathway we are cutting through the long neglected and ignored field of veterinary sanitary medicine and marking for ourselves a page in history that shall never be effaced and to which in the near future the humblest mortal on earth will gladly give homage. 'Tis under these auspicious conditions, my colleagues, that I welcome you to the deliberations of this convention, and toward whose work you have long looked forward with eagerness and pleasure. I bid you all the freest expression of your thoughts during the sessions of our convention, and I would ever remind you that this is your "Mecca," toward which your annual pilgrimages are made to lay down your offerings and tributes as tokens of the measure of your appreciation of the responsibilities that your profession has laid upon your shoulders. It is meet to do good at all times, and while your chosen calling may never bring wealth, it brings to you one and all that which is better,—happiness, honor and power; and to do good to your fellow-man is the highest and noblest work one can engage in, and he who would bend his whole aim and purposes in our work of mercy and the relief of suffering, to the greed of gain, is unworthy of the name of veterinarian, and pity 'tis that he ever entered the ranks of the profession. The

everyday sacrifices of our calling, I am thrice proud to say, are borne by the rank and file of our profession throughout the land in a manner worthy of the cause. I have found in the profession a long list of colleagues and friends whose devotion to their work; whose sincere friendship of much worth, and whose earnest lives, well lived, have thus added a deal of pleasure to my own, that I would not have missed in this busy, rushing world for aught that I know. I am not unmindful of the heavy burdens of the hour, or the toil and sacrifices that have been yours for many months. I am not oblivious of the trying ordeal you have and are passing through the length and breadth of our land, but the darkest night has its daybreak, and the sunshine of prosperity will pierce this period of adversity, and when, like the opening petals of the morning flowers, will come to you sweetened by the trials that have been yours to bear; and to cheer you with a fullness of joy greater than one can conceive of now. Already we note the changed sky, already we see the promised day breaking, when higher and better than ever before will rise the column of American veterinary science to enlighten not alone ourselves but the whole world. I have only pity for those who in this period of trial have taken false steps and so far forgotten their duty and the higher purposes of our calling, to bend their energies and strain their consciences in entering upon questionable methods of practice and resorting to the usages of charlatans and knaves in the preparation of nostrums and remedies of little value, to impose upon an ignorant and gullible public, and which brings unjust censure upon our profession and brands him who perpetrates the fraud as a knave. I am filled with regret and I sorrow for those who have so far forgotten themselves to take this first false step, for it leads only to danger and disaster, and to continue, means to them one and all the loss of every true aim of the profession, and in the end brings only a sad and disappointing career.

These hours of deep concern have brought forth better than we planned and hoped for. It has shown the way to broader fields of labor and opened full wide a domain of usefulness in sanitary work of unlimited scope and where may be rendered to all mankind the greatest benefits and command from him the highest meed of praise and admiration.

Our schools to-day are on the highest basis they have ever been, and the future promises that they will become bulwarks of strength and power to shed lustre upon your efforts for higher education, that must fill you with joy as you look upon these results as a part of the work you have so much contributed to.

In this direction permit me to quote from a recent annual report of one of our universities, in reference to its veterinary department. The conception of the aims and possibilities of a veterinary school is, I fear, very limited in our community. The aim of this school is not alone that of training men to minister to the ailments of the lower animals; while this is an essential and worthy object, the school has a higher purpose, that of demonstrating the relations in which such diseases stand to the welfare of the human family. Certain it is that this object is worthy the support and assistance of the State, the university and those private persons whose munificence and philanthropy are directed to the alleviation of suffering and the improvement of education. And I would add that the day is not far hence when this must be the aim and purpose of every veterinary school in our land.

Our positions of honor and trust, national, state and local, are all tending toward the merit system of election, and thus there will be given to them a higher character, a greater security, and this alone will bring to these places our best men and thus add to the general advancement.

Our associations are stronger than ever, and the work they are doing as missionaries of our cause has already been such as to win the approval and support of whole communities and commonwealths and thus add to the worth and need of our part of the world's work.

Our commissions and State boards of veterinary sanitary police have already done such good service as to attract the attention of the people of our own country, as well as that of the old world, a tribute of no little worth to add to our pleasure and joy. Tried and true men have in most instances found places on these commissions and boards, and the campaign of education has gone on in a manner that surely has brought joy to one and all, and which promises much for our future growth and development.

What shall I say in commendation of the grand work done in the Bay State? Planned on such a scale and with ends so well determined and fixed in advance of the times that their scopes and well-defined purposes startled us at the seeming boldness of the under-

taking, and made one and all shake their heads in a dubious manner, because of the radical measures advised.

Once again we must feel to-day filled with joy and pride at the results obtained ; the information gained; the good done ; the health and happiness of a people conserved ; the moneyed interests of a class of our people preserved and protected, a class who have long borne the burdens of the day and whose load has yearly grown heavier to carry. And in this rejoicing we may vie with one another in our pride and pleasure that those who have so well planned and directed this work and who have sacrificed so much in its being carried out are our fellow members and colleagues, and they well merit that which we are proud to render them, our sincere appreciation, admiration and approval of the work so well done.

Our Bureau of Animal Industry and its correlative bodies, our State experiment stations have been steadily adding to our wealth of knowledge and advancement, wiping away the brushwood that obscured and covered up the truths hidden deep in nature's methods and plans for the perpetuation of species and kind, and through whose ravages and destructive forces these oft-times microscopic bodies have inflicted upon our people the greatest losses and hardships, and brought disappointment and trial as the fruits of their toil. Better still will be the work of this national department in the future, for the establishment there of the merit system of appointment has already increased the efficiency of the service and it will become the aim and ambition of many of our best men who tend toward this kind of work, when they see that merit prevails and that tenure of office depends solely on good behavior and ability to perform well the services required. This service one now feels like commending to the consideration of all, for it affords great opportunity for development in many of our number, whose abilities and powers might otherwise never be fully brought forth. It will enhance this work in every way, and its richest fruits are yet to be gathered though the service already rendered by this department stands out more prominently as a true wealth conserver and safeguard to our people ; brighter and better than any other department of our government, when measured by the relative cost and in ratio to the immense moneyed interests, represented by our live stock interests, spread over every nook and corner of our great country. I cannot refrain from adding a word of praise at this time to the Chief of our Bureau of Animal Industry, whose long years of sincere service to the work of this department through every form of tribulation and trial under the most pernicious methods of filling office so long engrafted upon our country, that I can best express my approval of the whole of his work in this direction by saying that I know no one of our profession in this whole country who could have done so well.

Another thought I would have you keep in a fore place in these days of vaccines, antitoxins, specifics and agents sought for to dispose of every disease by a single measure or fixed plan of treatment, that the field of scientific modification and the proper use of drugs are yet for many years to fill your chief reliance for success and to measure your worth in every community. Calomel, aconite, belladonna, and cinchona bark ; aloes, epsom salts and linseed oil ; saltpetre, digitalis and sweet spirits of nitre, have not lost their potency for good, and each have their use and action, more valuable to-day than ever before ; for surely he who has lived in the profession the past ten years must have learned how better to use these and every other drug. How and when to use these efficient agents and the more potent and well prepared thousand and one others crowding upon us to-day demand our earnest attention and closer study, that we may reap a full harvest of good results in their use, and add something of value to the store house of veterinary therapeutics, that have for so many hundreds of years served well the aims and purposes of our predecessors in the days when serums and antitoxins were unknown.

Briefly have I alluded to a few aspects of our profession as they present themselves to-day, only to remind you that the scope of our work is still enlarging and will command from you greater devotion and deeper attention for the future.

These vitascopic views of our work must surely impress you of one great need, and to which I beg your indulgence for a few moments, and I would that I might say something to impress upon you its deep and vital importance to our future well being.

Higher veterinary education is the demand of the hour, and I have only words of praise for those schools so true to our interests that have added so much strength to this work during the past year. The opening college year for '96 brings the richest promises on all sides, and it is this great stride, this promised fruition of our hopes and wishes, that I de-

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sire to refer to for a moment in the light of our duty as followers of the profession, toward those who in these least auspicious times have courageously taken this step of advancement. They should command from us individually and collectively the most earnest support we can give them, and at all times our voice and pen should be ready and willing to aid them in this laudable work. In your community you each should take an active interest in any who may be considering the veterinary profession as his future calling, and see that so far as you may be able, he shall be so advised and influenced as to select one of the now many good schools, where he may obtain such an education as will help equip him for the work to be done. In every way that you can contribute to the thoroughness of the work in these schools you should do so directly and indirectly and make use of every opportunity to afford those who are to be your and my successors, men of well filled minds and of a breadth of knowledge that shall make them better able to fill the rôle of veterinarian than you and I have ever been. When you have done this you have only discharged your duty as a member of this association, and fulfilled the pledge of membership that added you to our number.

Another field of usefulness commands your support and aid, and it merits this to-day more strongly than ever before. It comes to you more worthy of your recognition and should be made better and stronger and kept thoroughly apace with every other avenue of our calling. No occupation or trade, no field of labor or work, but what must have its channels of communication, and through which every subject of importance may find a medium of discussion; a way by which every votary of our calling may be enlightened by our progress and kept steadily informed of all advances along the line. I refer to your journalism, and, freely admitting it is not what it should be; that it does not fill completely the rôle of power it should, still it is wholly within your own hands to give it that which it needs. It is yours for the expression of your views; it is yours for the recording of your cases; it is yours for the relation of your experiences; it is yours for every aspect and work of your adopted vocation, to make strong and sure your place among the enlightened nations of the earth, as a progressive branch of our world-wide profession, and as among those who are contributing toward that truest wealth of every nation or calling, its literature. With this hurried review of some phases of our work I bid you all the most thorough consideration of the broadest programme ever presented for your instruction and entertainment, which I am sure will add to the wealth of knowledge of every one present and when returning to his field of every-day work, add to own strength and confidence in a manner that only those can appreciate who have annually attended these gatherings, from which so much help is gained.

There could be no more laudable wish for any member of our profession than to be called to the chief place in this organization, and to thus represent his profession in such a nation as ours. For seven consecutive years I have been honored by this association in official place, four years as your secretary and three years as your president, and I cannot lay down the rôle of office without expression of my sincere appreciation of the honors you have conferred upon me. Equally so have I felt that no greater responsibility could fall upon one's shoulders. Not unmindful of how far short I have fallen in advancing your work through this organization, I shall carry to the end of my life the pleasant memory of this recognition of your esteem, and the most lasting recollections of the warm support and assistance I have always received from the members of this association.

The following list of members responded to the roll-call:

E. B. Ackerman, Brooklyn, N. Y.; W. L. Baker, Cortland, N. Y.; John A. Bell, Watertown, N. Y.; Roscoe R. Bell, Brooklyn, N. Y.; Geo. H. Berns, Brooklyn, N. Y.; Thomas F. Barron, Baltimore, Md.; C. A. Cary, Auburn, Ala.; Bent T. Cotton, Mt. Vernon, Ohio; A. W. Clement, Baltimore, Md.; W. H. Dalrymple, Baton Rouge, La.; D. J. Dixon, Hoboken, N. J.; Wm. Dougherty, Baltimore, Md.; Robert W. Ellis, New York City; H. D. Gill, New York City; E. A. A. Grange, Lansing, Mich.; Wm. H. Gribble, Washington, C. H., Ohio; John R.



Hart, Philadelphia, Pa. ; John Hawkins, Detroit, Mich. ; Nelson P. Hinkley, Buffalo, N. Y. ; W. J. Hinman, Winnipeg, Manitoba ; W. H. Hoskins, Philadelphia, Pa. ; L. H. Howard, Boston, Mass. ; Joseph Hughes, Chicago, Ill. ; Wilson Huff, Rome, N. Y. ; Wm. Jakeman, Halifax, N. S. ; Wm. Henry Kelly, Albany, N. Y. ; F. L. Kilborne, Kelloggsville, N. Y. ; M. E. Knowles, Butte, Mont. ; James Law, Ithaca, N. Y. ; J. Payne Lowe, Passaic, N. J. ; Charles P. Lyman, Boston, Mass. ; Richard P. Lyman, Hartford, Conn. ; H. M. Manley, Miamisburg, Ohio ; James McDonough, Montclair, N. J. ; Frank H. Miller, Burlington, Vt. ; F. H. Osgood, Boston, Mass. ; Leonard Pearson, Philadelphia, Pa. ; Wm. H. Pendry, Brooklyn, N. Y. ; A. T. Peters, Lincoln, Neb. ; Lemuel Pope, Jr., Portsmouth, N. H. ; W. C. Rayen, Nashville, Tenn. ; James B. Rayner, West Chester, Pa. ; Thomas B. Rayner, Chestnut Hill, Pa. ; M. H. Reynolds, St. Anthony Park, Minn. ; James L. Robertson, New York City ; James Robertson, Chicago, Ill. ; L. A. Robinson, Buffalo, N. Y. ; D. E. Salmon, Washington, D. C. ; E. H. Shepard, Cleveland, Ohio ; M. Stalker, Ames, Ia. ; S. Stewart, Kansas City, Kan. ; Harry Sutterby, Batavia, N. Y. ; S. J. Thompson, Winnipeg, Manitoba ; M. R. Trumbower, Sterling, Ill. ; H. J. S. Weicksel, Shamokin, Pa. ; John Wende, Buffalo, N. Y. ; H. S. Wende, Tonawanda, N. Y. ; W. E. Wight, Delaware, Ohio ; W. L. Williams, Ithaca, N. Y. ; C. J. Willganz, Buffalo, N. Y. ; J. F. Winchester, Lawrence, Mass. ; J. M. Wright, Chicago, Ill. ; F. A. Zucker, Elizabeth, N. J.

The following visitors were in attendance :

L. G. Moore, Trenton, N. J. ; J. A. McCrank, Plattsburgh, N. Y. ; C. J. Mulvey, Mooers, N. Y. ; S. Somerville, Buffalo, N. Y. ; D. McEachran, Montreal, Can. ; A. Smith, Toronto, Can. ; John S. V. Bowen, *Courier*, Buffalo, N. Y. ; C. R. Schultz, Ogdensburgh, N. Y. ; I. H. Taylor, Henrietta, N. Y. ; L. L. Bishop, Delavan, N. Y. ; R. Perkins, Hardy's, N. Y. ; R. E. Collins, Memphis, Tenn. ; H. D. Martin, Buffalo, N. Y. ; R. C. Bowman, East Aurora, N. Y. ; F. A. Crandall, Buffalo, N. Y. ; J. P. Thomson, Niagara Falls, N. Y. ; E. Rafter, Hamburg, N. Y. ; E. H. Humphrey, Remington, Ohio ; W. E. Stocking, Medina, N. Y. ; J. T. Liddle, West Shelby, N. Y. ; Arch. B. Campbell, Berlin, Ont., Can. ; J. W. Orr, Baden, Ont., Can. ; F. F. Hoffman, Brookville, Pa. ; Wm. Gibbs, St. Mary's, Can. ; Frank J. Thornburg, Buffalo, N. Y. ; James T. McAnulty, Philadelphia, Pa. ; Anderson Crowforth, Lockport, N. Y. N. ; Recktenwald, Pittsburgh, Pa. ; M. W. Drake, Philadelphia, Pa.

The Secretary then read the minutes of the session of 1895, at Des Moines, which were approved.

The following names were reported favorably upon by the Executive Committee and were enrolled as members: James Law, M.R.C.V.S., Cornell University, Ithaca, N. Y.; W. C. Rayen, D.V.S., Nashville, Tenn.; Chas. Higgins, D.V.S., Dover, Mass.; E. P. Shaffter, V.S., Kansas City, Mo.; H. Wellner, D.V.S., Providence, R. I.; F. H. Miller, V.S., Burlington, Vt.; F. W. Hopkins, D.V.S., Kansas City, Mo.; A. S. Wheeler, V.M.D., New Orleans, La.; W. H. Ridge, V.M.D., Trevoose, Pa.; W. H. Kelly, V.S., Albany, N. Y.; S. J. Thompson, V.S., Winnipeg, Manitoba; W. H. Hinman, V.S., Winnipeg, Manitoba; T. B. Cotton, V.S., Mount Vernon, Ohio; S. B. Staples, D.V.S., Baton Rouge, La.; E. H. Shepard, V.S., Cleveland, Ohio; F. A. Zucker, D.V.S., Elizabeth, N. J.; J. P. O'Leary, M.D.V., East Buffalo, N. Y.; W. H. Gribble, D.V.S., Washington C. H., Ohio; H. M. Manley, V.S., Miamisburg, Ohio; H. S. Wende, V.S., Tonawanda, N. Y.; W. E. Wight, V.S., Delaware, Ohio; E. L. Quitman, M.D.C., Chicago, Ill.

The report of the Committee on Army Legislation (Dr. J. P. Turner, chairman) was read by the Secretary, and it was very interesting, showing the difficulties with which it had met; how it had been recommended by the committee on army affairs of the House of Representatives, had met the approval of the highest army officials, had been disapproved by certain other army authorities, and finally approved by the legislative committee over their objections, an action seldom taken by that body. Speaking upon the report, Dr. John R. Hart, a member of the association's committee, stated that the bill was now in good shape to pass, and he would almost guarantee that it would become a law at the next session of Congress. He asked for a small appropriation from the association to defray necessary expenses, and remarked that the committee's work for next winter should not be hampered, even if he had to pay the bills out of his own pocket. The association deferred making the appropriation until after the Treasurer made his report. The committee has worked very hard, and is entitled to the thanks of the profession at large.

Chairman Williams, of the Committee on Publication, submitted his report, showing that the funds of the association had been in such a deplorable condition that the printing of the proceedings of the last two sessions in book form had been found to be impracticable, although it had been pledged to the members

that when the dues were increased to \$5 each member would receive such a copy. That those members who paid their dues, and were prevented from attending, were entitled to and should receive a *verbatim* report of the proceedings ; but, notwithstanding this, it was deemed inexpedient to precipitate a greater load of debt upon the association than it now carried. So that they deemed it better to leave the deliberations of those years unpublished and come before the meeting this year free from debt. The cause of the paucity of the treasury had been the backwardness of the members in paying arrearages, although the Secretary had been insistent in his efforts to make collections. This year the conditions were much improved, although economy in the matter of publication must be indulged in. So that bids were asked for, especially from the publishers of the veterinary journals, in the hope that the dual publication in the periodicals and the "Proceedings" would result in the cheapening of the cost of printing. In a discussion of the subject before the meeting the publishers of the journals showed a liberal spirit, and the matter was left in this shape until bids could be obtained from all of them, when the contract would be awarded. It came out in the discussion as the sense of the meeting that no circumstance should prevent the fulfilling by the association of its obligations to its members in supplying them with the "Proceedings," as those members who were unavoidably absent were clearly entitled to them from previous pledges of the association. Later on, the Secretary announced that the condition of the treasury had so improved during this meeting as to make it positive that the publication would be pushed to an early completion.

The matter set for discussion in the afternoon of the first day—"Master Horse-Shoers Association Relative to Veterinary Instruction in Schools of Farriery"—proved to be a very live question, and the debate upon it was of the most animated nature. The discussion was begun by the reading of a paper by Dr. H. D. Gill, who took a middle ground and treated the question from a scientific standpoint, after which Prof. Joseph Hughes, of Chicago, outlined the course of instruction that he deemed most suited to the encouragement of the shoers—confining it to the normal anatomy of the structures of the horse's foot. Dr. James Robinson, of Chicago, who has done considerable work among the horse-shoers association, followed in a well prepared paper, taking a lofty stand in favor of instructing blacksmiths in the normal and pathological conditions of

the foot; teaching them pathological shoeing, and generally making them proficient in the treatment of diseases of the locomotory apparatus. Dr. McAnulty, of Philadelphia, reported the progress made in the Philadelphia schools and the methods in operation there, and endorsing the work. Dr. McKenzie followed in the same strain, asking the assistance of the association in behalf of the blacksmiths. Dr. Hawkins, of Detroit, narrated incidents where the instruction of the blacksmith in locomotory pathology transformed him into a dangerous "quack," and he expressed an emphatic disapproval of the proposition. Prof. Leonard Pearson, of Philadelphia, in a very neat little talk, told of the experiences upon this line in foreign countries, and doubted the policy of the association in endorsing the proposition beyond the point of normal conditions. Dr. James McDonough, of Montclair, N. J., a practical blacksmith and a veterinarian, thought the association would be nursing a viper by making half-educated foot experts, claimed that these attainments were being achieved at the expense of the practical work at the forge, and caused considerable amusement by his quaint way of driving nails in his argument. Dr. James Robinson replied in a rather heated manner to the strictures of Dr. McDonough, and said there never was a great movement for the betterment of mankind that did not meet with just such opposition as this proposition was encountering; but that it would go on and on, for the horse-shoers association was in earnest in its quest of knowledge. Dr. Dixon, of Hoboken, N. J., thought the avocation of the blacksmith was a "handicraft," and not an "art," nor a "science"; that the members of this association were incapable of instructing them in their "handicraft," the manual manipulation of their tools, the forging of a shoe, and therefore the association should be silent upon the subject. Altogether, there was a great variety of opinions expressed, the discussion was very animated, and the question was finally submitted to the Committee on Resolutions, which presented the following conservative expressions, and was adopted by the association:

*Resolved*, That this association approves the action of the Master Horse-Shoers' Association in reference to the instruction of its members and their subordinates on such subjects as tend to perfect the art of horse-shoeing and thus avoid the great and frequent losses that result from the imperfect shoeing of the horse's hoof, and this association pledges its support to all properly-directed measures designed to accomplish this object, and it is the sentiment of this association that horse-shoers should be instructed in such subjects as pertain to the normal form and function of the foot, and the mechanical processes necessary to preserve such conditions.

The report of the Committee on Intelligence and Education,



submitted through its chairman, Dr. A. W. Clement, a very comprehensive analysis of the condition of education at the various colleges of the country, showing the number of veterinarians in the faculties, the course of instruction, and the length of the period of attendance. The result as a whole was most satisfactory to the association, and showed a healthy state of educational matters.

The resident State Secretaries responded more generally than ever before, showing a more thorough knowledge of the condition of sanitary medicine in their respective States than previously and most of the reports gave a general synopsis of the status of the profession in the several States.

The report of the Committee on Diseases was delayed until the afternoon of the last day, and was very far from being an ideal collection of statistics and interesting data. The reading of the report from Alabama, dealing with insignificant data, was provocative of much merriment.

The discussion of the subject of tuberculosis in its various aspects was possibly the most interesting, instructive, and scientific debate that has ever engaged the National Association, and certainly the most comprehensive of this meeting. The discussion embraced the subject in the following aspects: "Systematic Examination by the State," "After Effect of Tuberculin on Healthy Cattle," "Danish System of Controlling Tuberculosis," "French System of Controlling Tuberculosis," "Virulence of Milk from Tuberculous Cows," "Virulence of Flesh from Tuberculous Cattle," "What Should be done with Tuberculous Cattle," "If the Flesh of the Slightly Affected may be Used, Where Draw the Line." Prof. Osgood led the discussion, basing his argument as to the systematic examination of cattle by the State largely upon the methods and experiences of the Massachusetts Cattle Commission, of which he is a member, and his exposition of the practices there employed was very interesting. Dr. D. E. Salmon, of the Bureau of Animal Industry, spoke upon the same aspect of the subject, and dwelt upon the difficulty of the government in being able to cope with such a widespread and insidious disease at the present time. Prof. Leonard Pearson made a most lucid description of the Danish and French systems of controlling the disease, and showed how their methods, while suiting those countries admirably, were untenable in the United States. He also dwelt upon the disease as it exists in his State (Pennsylvania), and showed how the great number of cows—



over one million—precluded the opportunity of testing systematically by tuberculin, with slaughter and compensation by the State. Prof. C. P. Lyman, of Harvard, had much to say upon the after effects of tuberculin, doubting if the slight fever following for a few days was caused by the injection, but rather by the changed methods of feeding, by the excitement incident upon handling of the cows by strangers, and such circumstances. Dr. M. R. Trumbower, State Veterinarian of Illinois, gave his methods of drawing the line between what meats of carcasses should be used for consumption and what should be condemned, and it was based more upon the reasoning of common sense than upon any scientific tables. Dr. Clement, State Veterinarian of Maryland, rather doubted the virulence of the meat and milk of tuberculous animals, and thought that experiments upon a large scale should be indulged in to show the exact effects of these products upon small animals, with a view of showing comparative results upon the members of the human family. That if the danger was exaggerated the public should know it. Dr. Pearson replying greatly regretted the position taken by Dr. C., stating that the facts as accepted by the convention were those acquiesced in by every scientific man of the age, and contended that experiments without number had been held proving those points, and that circumstantial evidence was not lacking to show the virulence of these products upon the human subject. Prof. Stalker, of the Iowa Agricultural College, an eloquent speaker, deprecated the remarks of the gentleman from Maryland, and said that the objectors to laws looking to the control of such diseases would always seize upon such remarks in pressing their opposition. He said it was like entering an edifice to "pray to the Lord, if there is one, to save your soul, if you have one." Further discussion was indulged in by Prof. E. A. A. Grange, of the Michigan Agricultural College, W. J. Hinman, Meat and Milk Inspector of Winnipeg, Manitoba; S. J. Thompson, Provincial Veterinarian of Manitoba, and others.

The debate was so exhaustive that we shall print it in a *verbatim* form as soon as the stenographer's report has been edited by the Publication Committee and transmitted to us.

Apropos of the discussion, the following preamble and resolutions were presented by the Committee on Resolutions and unanimously adopted by the association:

*Whereas*, tuberculosis of some of our domestic animals, and especially of cattle, is a widespread and destructive disease, and

*Whereas*, statistics accumulated during the past year show that the disease is very prevalent throughout this country, especially in dairy herds, and indicate that it is steadily

increasing, except in states where active measures for its suppression have been enforced, and

*Whereas*, There exists in some quarters a difference of opinion as to the relation of tuberculosis among cattle to the public health, notwithstanding the fact that this matter has been the object of careful scientific inquiry by a great number of eminent scientists in all parts of the world, and that reliable and uniform results and observations are recorded in great numbers in the veterinary and medical literature, be it

*Resolved*, That it is the opinion of the United States Veterinary Medical Association that the following points have been demonstrated beyond dispute and may be accepted as fully established :

1. That tuberculosis of man and cattle is identical.
2. That the milk from cows with tuberculous udders may cause tuberculosis in animals fed upon it.
3. That the milk from cows with extensive tuberculosis but apparently healthy udders may in some cases contain the germs of tuberculosis and cause the disease in animals fed upon it.
4. That in some cases the germs of tuberculosis appear in the milk of tuberculous cows that are not far advanced in the disease and that have udders that are healthy, so far as can be determined by an examination made during the life of the animal.
5. Slightly tuberculous cows sometimes succumb to a sudden exacerbation of tuberculosis and furnish virulent milk for a period before it is possible to discover their condition by means of a physical examination.
6. Tuberculin furnishes incomparably the best means of recognizing tuberculosis in the living animal.
7. Tuberculin, properly used for diagnostic purposes, is entirely harmless to healthy cattle, and is so exceedingly accurate in its effects that the few errors resulting from its use cannot affect the general results and are of less frequent occurrence than follow the use of any other method of diagnosing internal diseases.
8. That the carcasses of tuberculous animals may be and sometimes are dangerous to the consumer, and all such carcasses should be subjected to rigid inspection by a competent veterinarian and those that are condemned should be disposed of in such a manner that it will be impossible to put them on the market for consumption as human food.
9. That the importance of dairy inspection cannot be overestimated, and municipal and health authorities should at once perfect a system commensurate with the vast importance of the subject.

*Resolved*, That the live stock and especially the breeding interests of this country can never regain their former prosperity until such measures have been carried out by the national and state governments as will afford some reasonable guarantee against the continued ravages of this disease. And in view of the prevalence of bovine tuberculosis in foreign countries and the measures taken by some of them to protect their cattle from further infection the United States should prohibit the importation of breeding animals until they have been proven by the tuberculin test to be free from this disease.

The election of officers for the ensuing year was next taken up, and resulted as follows :

President—Frederick H. Osgood, M. R. C. V. S., of Boston, Mass.

Vice President—Eastern Division, Roscoe R. Bell, D.V.S., of Brooklyn, N. Y. ; Middle Division, M. R. Trumbower, D.V.S., Sterling, Ill. ; Western Division, M. Stalker, V.S., Ames, Iowa.

Secretary—Sesco Stewart, 7 1/2 South James St., Kansas City, Kansas.

Treasurer—James L. Robertson, M. D., D.V.S., New York City.

Ex-President Hoskins presented a new gavel to the incom-

ing President, the gift of the Buffalonians, remarking that it was the first the association had ever owned, and in accepting it the recipient returned thanks for the great honor which the members had conferred upon him, saying that that office was the highest from a professional standpoint that could be conferred upon a veterinarian in this country. Incidentally he paid a very high tribute to the great work which had been wrought by the retiring President, affirming that the present flourishing condition of this great and influential body was in a large measure due to his wonderful energy and enthusiastic exertions in its behalf. He had taken hold of the helm when it was little else than a local eastern organization, with but little influence in a national sense, and when he now relinquishes active office it is a powerful organized body of earnest men working in unison with zeal and determination for grand ends and whose influence is masterly whenever its weight is exerted. He said he would feel perfectly satisfied to continue the work for the next year as it had been done for the past, but he would strive to make it even better. The vice-presidents were then introduced, and each had a few words to say in acknowledgment of the honor bestowed upon them. The re-election of Dr. Stewart as secretary was everywhere commended, as he had made a most indefatigable worker, and in response to calls for a speech he remarked that the members would all hear from him during the year, and trusted they would respond for the best interests of the association. When the new treasurer, Dr. Robertson, was re-elected for the 'steenth consecutive term many were the calls for a speech, but he had hied himself away, and could not be found.

The association then adjourned to enjoy a delightful excursion, arranged by the local committee, and they again met at the dock, where they, in company with their wives, sweethearts and friends, embarked on the steamer "Idle Hour" for Niagara Falls, where they boarded the wonderful Gorge Electric Railroad, which passes down on the banks of the Niagara River, past the Whirlpool Rapids, and, continuing in a perfect panorama of the most weird and bewildering scenery, finally reaches the village of Lewiston, where the guests alight and view the many points of interest, after which they re-embark on the electric cars and are carried over the same route back to the Falls, where tickets have been distributed to convey the guests by elevator to the summit of the wonderful tower, which presents the grandest view of that grand country that it is possible to ob-

tain. When the sight-seeing is over cars are again boarded for the boat which brought them hither, and when sail is set all sit down to a most generous repast of all that makes life worth living, and the good things are so heartily partaken of that the excursion is continued on down into Lake Erie, where the time slips by most pleasantly to the strains of sweet music and dancing. At 10 P. M. the boat anchors at her dock, and the light-hearted guests seek their abiding places, with a high appreciation of the bountiful hospitality of the occasion's hosts.

The convention reassembled at 10 A. M. on the morning of the 3d, and, after the report of the recommendations of the Executive Committee, which were acted upon according to their findings, the reading and discussion of papers was taken up.

Dr. J. F. Winchester, of Lawrence, Mass., presented his paper upon Diphtheria in Cattle,\* which was in the nature of a report of an outbreak which occurred in his practice. The essayist went very deeply into the symptoms presented during life, autopsies upon the dead, and microscopical examinations of the pathology in the cases, having the assistance of trained men in those departments. The discussion following was indulged in by Drs. Gill, Salmon, Lyman, Grange, Knowles and others, and altogether much light was thrown upon a disease whose recognition has been shrouded in doubt and where little original research has been indulged in.

Dr. W. H. Dalrymple, of New Orleans, La., then read a most interesting paper entitled "Some Southern Experiences," dating his story from the time of his entry, previous to which such a thing as an educated veterinarian had never been seen, and the people looked upon him as a curiosity, but as he became acquainted with them, and demonstrated his superiority to the humbugs that had previously infested the country he gained their confidence, and now they employ his services and rely upon his judgment. The report, after giving further interesting details of the profession in that section, and intimating that there is a great field for the veterinarian yet to be developed, he described an extensive outbreak of charbon, which depopulated great herds of cattle, mules, and sheep; how they had exhausted the supply of anthrax vaccine in this country and sent to Europe for more; how the injection of this agent checked the disease and saved many lives. The paper brought forth an animated discussion, and will be published in the REVIEW in its complete form (the paper with the discussion appended) as soon as it is possible to obtain it from the Publication Committee.

\*Printed elsewhere in this issue.



Dr. Salmon then read his paper, "Tuberculosis in Birds," which dealt largely with a comparison of that disease in gallinacea and in mammalia, with the deduction that there is much resemblance between the two classes of disease, and that it is not readily transmitted from one to the other. It is probably the most exhaustive treatise on this subject in the English language, and brought out a generous discussion, indulged in by Drs. Peters, Lyman, Knowles, Winchester, and the essayist.

Dr. Peters, of the Experiment Station at Lincoln, Neb., read a very interesting report of his researches with "Serum-Therapy in Hog Cholera," detailing actual experiences with the disease as it came to him in the line of his duties. The paper was highly appreciated by those present who were interested in the subject, and was discussed by Drs. Salmon, Gill, Stalker, Grange, Thompson, and others.

Then Dr. M. H. Reynolds, of Minnesota, brought forth a very voluminous paper upon the subject of "Cathartics," especially dealing with the alkaloids used for quick action, comparing the various actions obtained by different combinations of eserine, pilocarpine, strychnine, and belladonna, given by every known method of introduction into the system, comparing their effects upon horses in health and in morbid states of the system. Also detailing the results of his experiments with the later agent, barium chloride. His experiments were most exhaustive, and his conclusions rather tended to show variable actions in different individuals under apparently the same circumstances, and he was not certain but that as a general rule the old reliable aloes and linseed oil could be more thoroughly relied upon. Interspersed with accurate and interesting tables, Dr. Reynolds' contribution to therapeutics is invaluable to the advanced student and practitioner. If we may be allowed, however, to criticise the paper, we would suggest that it is more suited as a contribution to the literature of our periodicals or text-books than as a thesis before an association meeting, as the details are so diversified that the mind cannot follow the argument, and much of its value is lost to the listener. The question with which it deals has been so much discussed and with so many conclusions that the profession is much indebted to the essayist for his most extensive and complete investigations. As soon as the REVIEW can obtain the copy from the Committee on Publication it will appear in these columns. The reading of Dr. Reynolds paper was not completed, owing to lack of time, and its discussion was postponed until the next meeting.



Prof. W. L. Williams, who has so recently taken the vacant chair at Cornell University, was as interesting as usual in a paper entitled "Physiological Variations," and he treated the subject in that masterly manner of which he is so capable. The discussion of his paper was, for lack of time, also postponed.

Frank H. Miller, fresh from the clinics of Berlin, read a very fascinating paper on "Diabetes Mellitis in Dogs," and his conclusions were backed up by numberless cases from the hospitals, from entrance until post-mortem and microscopical examination. He demonstrated that the disease is much more common in the canine than is usually supposed, and we fear that many of us fail to recognize the disease in these cases because our examinations are not minute enough; that the urine should be tested for the presence of sugar in those cases that give evidence of urinary derangement. His paper was much enjoyed, but, unfortunately, it shared the same fate as the preceding ones—discussion postponed.

Dr. S. B. Nelson's paper, "Nail Wounds of the Foot," was sent to the Secretary, together with a contrivance for securing the dressing in place, but its reading was dispensed with, and it was ordered published in the "Proceedings." So was Dr. N. S. Mayo's on "Some Poisonous Stock Foods," he having transmitted some of the foods described. And so was Dr. James A. Waugh's article, "Toeclip Injuries."

The Committee on Resolutions introduced the following, which were unanimously adopted:

*Resolved*, That the United States Veterinary Medical Association, assembled in annual convention at Buffalo, N. Y., September 3, 1896, hereby respectfully and most earnestly protest against the passage, by the Congress of the United States, of Senate Bill No. 1552, improperly entitled a bill for the further prevention of cruelty to animals in the District of Columbia, or of any other bill designed, like the said bill, to place restrictions upon scientific experiments upon living animals.

*Resolved*, That the said association believes such legislation to be injurious to the progress of the biological sciences, and that where operative it will prevent the acquirement of medical knowledge essential for the prevention and cure of the diseases of animals and men, and desires to add its protest to the protests already made by the American Medical Association, the National Academy of Sciences, the Association of American Medical Colleges, the Association of American Physicians, the American Academy of Medicine, the Medical Society of the District of Columbia, the American Association for the Advancement of Science, the American Microscopical Society, and other medical and scientific societies of the United States.

*Resolved*, That the Secretary be directed to transmit a copy of these resolutions to the President of the Senate and the Speaker of the House of Representatives.

*Resolved*, That the United States Veterinary Medical Association appreciates the opportunity so courteously presented by the Pasteur Monument Committee of France to the American people of assisting in the erection of a suitable monument at Paris to the memory to the great investigator, and that the President is hereby authorized to appoint a committee to raise a fund which shall be presented in the name of the association.

WHEREAS, The 33d annual meeting of the United States Veterinary Medical Association in Buffalo has been so enjoyable and profitable as to mark the beginning of a new era in the history of our organization, and

WHEREAS, This gratifying state of affairs has resulted largely from the efforts of the energetic and hospitable local committees, be it

*Resolved*, That this Association tender to the local committee and those who have assisted them a vote of thanks to indicate its sincere appreciation of the reception it has been accorded in Buffalo and recommends that the President appoint a committee to draw up suitable resolutions expressive of our appreciation, and that the same be engrossed in permanent form and presented to the Chairman of the Local Committee of Arrangements and that a copy of the same be spread upon the minutes of this meeting.

WHEREAS, His Honor, acting Mayor Boeckel, with all the numerous demands which have been made upon his time has honored us by opening our convention and extending a cordial welcome and the freedom of the city, be it

*Resolved*, That we, the members of the United States Veterinary Medical Association, recognizing these facts and with a full appreciation of the same extend to him a hearty vote of thanks.

Adjournment took place very late in the afternoon, leaving just sufficient time for the members to dress for the banquet, which took place at the Genesee House, the guests assembling promptly at 8 o'clock, and about sixty sat down to a very tastefully arranged table, loaded with flowers and plants. When the cigars were passed around, the toastmaster, the versatile Dr. Hoskins, began his famous introductions, and so bright were his outbursts that at one time there was a serious intention of resolving the banquet into a committee of the whole and just devote the evening to listening to his witty and delightful personalities.

The first speaker was Senator Mahany, of Buffalo, who responded to the topic of his city, and he did so to the delight of all; his address, though extemporaneous, was a scholarly discourse upon the horse in history.

Dr. Miller, chemist of the State agricultural department for the section which includes Buffalo, was happy in his reply to a toast to his collateral department.

Prof. McEachran was reminiscent in his remarks, going back to the time when he and Principal Smith were classmates in the Veterinary College of Edinborough; they had always been lifelong friends, and he was sorry that the Toronto professor could not go on with the profession in its advance to a longer period of attendance, and hoped that he would so decide in a very short time.

Prof. Smith then arose and paid his respects to the McGillian, and claimed that his school was doing and always had done good work, as his successful alumni all over this and other countries would demonstrate. His excitement was only temporary, how-

ever, and the two patriarchs of veterinary medicine were soon touching glasses across the table.

They were followed by Dr. Tremaine, of Buffalo, who spoke to "Our Sister Profession," and incidentally paid high praise to this profession.

Afterward Profs. Law, Hughes, and Bell made brief addresses in response to flattering introductions by the toastmaster, the last named speaking for the profession of "veterinary journalism," and he contended that the veterinary magazines of the country were not meeting with the pecuniary support that their merits warranted, as they were, without doubt, very creditable; that they were doing more to advance and protect the profession than any other factor now in existence, and he hoped those who listened to him would endeavor to assist in the spread of its material popularity.

When the guests dispersed at 12 o'clock, the thirty-third annual meeting was over, and it was the opinion of all whom the writer interrogated that it was the most largely attended, interesting, and profitable that has ever assembled in America.

#### NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The seventh annual meeting of the New York State Veterinary Medical Society commenced at 11 o'clock A. M. at the Genesee House, Buffalo, N. Y., Sept. 4, 1896.

On roll-call there were 16 members present, but within half an hour the parlors were well filled, about 35 members present, and 15 to 20 visiting veterinarians from various parts of the United States dropped in to see and hear the proceedings. Among them were some of the lights in the profession. The President opened the meeting with the annual address, which was listened to with unusual interest and well received. The Secretary's report was then read, which dealt entirely with the finances and business management of the Society. On motion the report was accepted as offered and ordered spread on the minutes.

The applications of twelve candidates were offered, and referred to the Board of Censors.

A question was offered for discussion relative to present and future applicants when elected to the Society receiving their certificate of membership with the understanding that they should hold possession of the same during their continuing as members in good standing, and whenever that relation should

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cease that their certificate of membership be returned to the Society. Drs. Geo. Berns, W. L. Baker, N. P. Hinkley, W. H. Kelly, John Wende, H. S. Wende, Wilson Huff, Thompson, and W. L. Williams, of the State Veterinary College at Cornell University, entered heartily into the discussion.

Dr. M. R. Trumbower of Sterling, Ill., made a few remarks and invited the Society to attend their state meeting of veterinarians in November next, bringing with them any matter of interest to the profession at large. A vote of thanks was given Dr. Trumbower.

Dr. Osgood, of Massachusetts, made a few remarks on the status of the profession, which were well received.

Dr. Hoskins, of Philadelphia, spoke in his usual pleasing manner for a few minutes on the character of the profession in New York State.

Meeting adjourned for lunch.

Afternoon session convened at 1.30. President called Dr. J. P. Thompson to the chair. Report of the committee on arrangements submitted, which included the arrangements for the United States Association, as well as the State Society. The members were well pleased with what had been provided for their comfort and enjoyment and wished to thank the committee for their efforts.

Committee on Legislation reported the following :

*Mr. President, Officers and Members of the New York State Veterinary Medical Association :*

As chairman of the Committee on Legislation, I respectfully submit the following report :

The past session of the Legislature has been a very interesting one for the veterinarians of this state. Not so much on account of there being any such important bill passed as there was in the year 1895, but that we have been able to hold this law in full force ; and it has only been amended in behalf of the veterinarians who did not register according to law, through some misunderstanding or oversight. There have been several attempts to set the law of 1895 aside, temporarily, in behalf of the non-graduate ; but we are pleased that the efforts have been unsuccessful.

During the session there were six bills introduced into the Legislature, in which the veterinarians were interested. The first, Assembly Bill No. 249, was introduced Jan. 16th by Hon. C. C. Cole, entitled, "An Act to amend the Public Health Law, relating to the Practice of Veterinary Medicine."

Second, Senate Bill No. 227, was introduced Jan. 21st by Hon. T. Sullivan, entitled, "An Act to amend sections number one thousand eighty-one and eleven hundred twenty-seven of the Code of Civil Procedure."

Third, Assembly Bill No. 346, introduced Jan. 22d, the same as Senate Bill No. 227.

Fourth, Senate Bill No. 351, introduced Jan. 30th, by the Hon. J. F. Ahearn, the same as Senate Bill No. 227 and Assembly Bill No. 346.

Fifth, Assembly Bill No. 995, introduced Feb. 19th, by Hon. Jas. S. Harrison, entitled, "An Act to enable James Wixon of Steuben County to practice veterinary medicine and surgery as a profession."

Sixth, Assembly Bill No. 2123, introduced April 1st, by Hon. Uriah S. Messiter, en-



titled, "An Act to enable persons to register as practitioners of veterinary medicine and surgery in the State of New York," May 11th, 1896; and who were qualified to register under said Act and failed so to do.

Seventh, Assembly Bill No. 2700, introduced April 21st, by Hon. M. V. Ives, entitled, "An Act to amend Chapter No. 813 of the Laws of 1896, entitled, "An Act to regulate the practice of veterinary medicine and surgery in the State of New York."

The first, Assembly Bill No. 249, as originally introduced, would let any person register that was a graduate of a reputable college or institution that claimed to be, as there were no restrictions. The committee seriously objected to this, on that ground, and wrote several letters of protest, and appeared in person before the Public Health Committee, stating their objections. After considerable debate the Committee finally decided to report it favorably, as amended in Assembly Bill No. 1183. This met with the unanimous endorsement of the Committee, and finally, after the Governor's signature had been affixed, became a law, May 22, 1896.

Senate Bill No. 227 was killed in the Committee as we were unable to get it reported. If it had become a law it would exempt the veterinarians of Kings and Queen Counties from jury duty, which was an oversight in the passage of a similar bill last winter.

Assembly Bill No. 346 was the same bill as Senate Bill No. 227. While it passed the Assembly it did not pass the Senate.

Senate Bill No. 351 was the same as No. 227 and met the same fate.

Assembly Bill No. 995 was introduced entirely in behalf of a quack, named James Wixon, of Steuben County. While it was being acted upon in the Assembly the Committee was not aware of it. Attention was called to it by Dr. A. O'Shea. Upon investigation it was found that the bill had passed the Assembly and reached the Senate and was in the hands of the Committee. Immediately, several members throughout the State were notified, and Doctors Morris and O'Shea, on the receipt of theirs, each had some two hundred circular letters printed, stating the nefarious condition of the bill, and also wrote the Chairman of the Committee.

Assembly Bill No. 2123, was entirely in behalf of the non-graduate, and was another one of their attempts to set aside the law.

Assembly Bill No. 2709 was also another struggle of the dying quacks, which was also killed.

A vote of thanks was given to the committee for their effective and excellent work.

The reports of the County Secretaries were called up in their regular order by county. Reports of several committees were made, all of which tended to show the status of the profession in that county, and also the nature of the work as it came in contact with several boards of health. The discussions were exceedingly interesting, the character of the work being such that justifies the employment of veterinary surgeons on all boards of health throughout the State; as the reports all showed that a great work was being done in protecting innocent consumers of flesh and dairy products against unwholesome and infectious food products. When Kings County was called up the report submitted by Dr. Geo. H. Berns brought out a very interesting and instructive discussion on glanders.

#### The report is as follows :

In presenting my report as County Secretary for the County of Kings, I am especially indebted to Dr. E. B. Ackerman, Veterinary Inspector of Brooklyn Department of Health; Dr. Wm. H. Pendry, Dairy Inspector Brooklyn Dept. of Health; Dr. E. L. Vo'genau, U. S. Inspector under Bureau of Animal Industry, stationed at Brooklyn; and



Supt. Frank O. Clarke, of the American Society for the Prevention of Cruelty to Animals, for having kindly furnished data from their various departments.

According to the police census taken some five or six months ago, there are 31,850 horses, and about 3,000 milch cows in the county. The general health of this number of animals has been exceptionally good during the last year, and were it not for a rather violent outbreak of glanders in the early part of the season, and the extremely hot spell in the middle of August, I am satisfied that the mortality would have been much lower than the average.

Influenza existed to some extent early in the spring and presented itself in rather a violent form; but was chiefly confined to sale stables and green stock in general.

Infectious pneumonia broke out in the Government stables at Fort Hamilton in the early spring, and out of about sixty horses, eighteen were taken with the disease, fifteen of which made good recoveries in two or three weeks' time; and three while convalescing from pneumonia developed rheumatism, two of which recovered fully within a week or two and one remained badly crippled.

Osteo-porosis continues to crop up in all classes of horses, but chiefly in comparatively young animals kept in old and badly ventilated stables, generally situated on the ground floor, and without any drainage; about fifteen well-marked cases came under my observation, some of which were destroyed and others were disposed of by their owners upon my advice; two cases so disposed of are reported as convalescing in other locations and stables.

Purpura hæmorrhagica, pleuro-pneumonia, azoturia, cerebro-spinal meningitis and colics carried off the usual number.

Metastatic laminitis following acute indigestion, pneumonia or influenza, was unusually common this spring and left quite a number of my patients in such a condition as to render destruction of life advisable.

The extreme heat of last month caused very heavy losses in Brooklyn; and dead horses were found on every street owing to inability of the contractor to remove them fast enough.

Dr. Ackerman states that of two hundred and fifty-eight cases reported to the Department of Health as glandered, farcied or suspicious, one hundred and fifty-two were found to be so affected and accordingly condemned and destroyed. In my own practice probably thirty cases came under my observation; the mallein test was employed in all cases where the symptoms were not sufficiently developed to warrant positive conclusions, and in two stables where glanders had existed for a long time and broke out periodically all animals were tested; those showing a reaction of two degrees or over, and the typical swelling at point of inoculation, were destroyed, and in probably twelve cases where no external symptoms of any description could be detected, post-mortem examinations were made and lesions indicative of glanders were found in every case; yet seven horses which had been among a lot of glandered animals for months, and reacted on the mallein test from three to five degrees, but were otherwise apparently in good health and showed positively not the slightest indication of glanders that could be detected on physical examination, were allowed to live and have been carefully watched since last March or April, when the mallein injections were made. At this writing, which is six months after the test, five of these animals appear to be still in good health and are doing their ordinary work; one was destroyed as glandered some three months ago, and one has been quarantined as a suspicious subject for the last two months. Is it possible that the germs of glanders are lying dormant all these months in those five horses that are at work? Or did the mallein injection have a curative effect? Or is mallein not altogether reliable as a means of diagnosis?

Dr. Wm. H. Pendry, in his official report to the Department of Health, states that less than 3 per cent. of the 3,000 milch cows in Kings County are affected with tuberculosis, as far as can be detected by physical examination, but qualifies this by saying that most of the cows are of the common hardy variety, frequently changed and retained by their owners only as long as they milk well, and failing in that are fattened for slaughter. He speaks of tuberculin as a most reliable diagnostic agent for tuberculosis, and advocates in the strongest terms that this test be applied to all dairy herds.

Dr. E. L. Volgenau, United States Inspector under Bureau of Animal Industry, examines all cattle killed at the Hudson Avenue Abattoirs. He reports that of 2,720 head

of fat cows and steers examined by him, 12 were affected with generalized tuberculosis, in advanced stages and a very much larger number with localized tubercular lesions. He concludes that fully one per cent. of all the cattle killed in these abattoirs since December 1st, 1895, were tuberculous. He found this disease mostly in fattened cows from local dairies; while actinomycosis was frequently met with in western steers.

I am pleased to be able to state that the veterinary profession in Kings County is rapidly gaining recognition, confidence and support from owners of live stock, the public at large and our city government.

Seventeen years ago, when there were a very much larger number of dairy cattle in the county and perhaps fully as many horses as there are now (owing to the introduction of the trolley system), not more than four or five regular graduated veterinarians, a few self-educated practitioners, and a dozen or two of ignorant, loud-mouthed empirics found employment in our county, where to-day there are 81 regular graduates in veterinary medicine registered in the county clerk's office, and I believe I am safe in saying that at least 95 per cent. are not only gaining a comfortable livelihood by their practice of the profession, but are looked upon and treated by the community in which they move as scientific and skillful men and respected citizens. Of the 34 non-graduates who have registered by affidavit only a very small number are engaged in actual practice, some few of whom are elderly men who educated themselves when there were no veterinary colleges in this country, and by years of study and experience have gained sufficient knowledge and skill to become successful practitioners and control to this day a respectable clientage; the rest are made up of overbearing stable foremen, conceited horseshoers, unscrupulous horse capers, travelling so-called veterinary dentists and patent medicine vendors, etc., who took advantage of the laws of 1886, and registered upon their affidavits that they had practiced for three years; but very few of this latter class remain in practice in Kings County. They were gradually forced from our ranks by a want of support, many have taken down their shingles and left for parts unknown, while others follow other occupations.

The city government employs 6 veterinarians in professional and official capacities, four of whom are connected with the Department of Health as veterinary inspectors, one as veterinarian to the Police Department and one as veterinarian to the Fire Department.

In conclusion, I cannot refrain from referring to the excellent work done by the A. S. for the P. of C. to A., in this city. It maintains a well-equipped office, consisting of an inspector, 4 patrolmen, one large ambulance for the removal of horses, and two small and exceedingly well appointed ambulances for the removal of homeless or to the owner objectionable cats and dogs.

A summary of the work in this city for 1895 shows:

Cases prosecuted in the courts.....	952
Disabled animals temporarily suspended from labor.....	3,403
Horses and mules disabled and past recovery humanely destroyed.....	2,987
Homeless or disabled small animals humanely destroyed.....	46,898
Disabled horses removed from streets to veterinary infirmaries or owners' stables.....	576
Complaints received and investigated.....	21,690

These figures show that the officers have not been idle, and that a vast amount of suffering among animals has been prevented by them.

GEO. H. BERNES,

*Secty. for Kings County.*

Professor Law, of Cornell University, thinks slight cases of glanders are not only amenable to treatment, but curable, even in our latitude and atmosphere, and on the western plains at high altitudes altogether so.

Dr. W. L. Williams, of Cornell, spoke of the prevalence of glanders in Russia and other parts of Europe, and finally of the disease on the ranges in Montana, where glanders exists to some extent, and is not only a curable disease, but that mallein treatment to a large degree produces such results, and that upon the

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plains the disease is not looked upon with that degree of horror as in the east.

Professor Law, speaking a second time, cited a case of glanders in New York City, which was treated, making a complete recovery, a similar case at Ithaca, and numerous cases in Wyoming.

Dr. Joseph Hughes, of Chicago, contends that glanders should not be treated, but all animals affected destroyed.

Dr. John Wende, of Buffalo, cites a case in which he saw three colts which had glanders; all made a complete recovery.

Dr. W. H. Pendry, of Brooklyn, believes veterinarians should not advocate the treatment of glanders.

Dr. Wilson Huff, of Rome, asked to hear from Dr. Peters, of Nebraska, who believes glanders is curable on the plains, but that treatment should not be attempted in cities, as the disease is best treated in open air on pasture.

Dr. John A. Bell, of Jefferson County, read a very interesting report of his county, showing that Watertown has a live Board of Health, and the members of the Society felt that the local Board of Health should be complimented for having as its sanitary officer so efficient a member as Dr. Bell.

The discussion was taken part in by Drs. Berns, R. R. Bell, Crowforth, Corvie, W. L. Williams and Huff.

The report of New York County by Dr. Arthur O'Shea is as follows:

As County Secretary, I beg leave to submit the following report from New York County:

Veterinary education has taken a decided step in our colleges in this city by an increase in the state requirements, it now being necessary for a student to pass the State Board of Regents veterinary preliminary examination, and before receiving a certificate must gain twenty-four points. This requirement is to be further increased to forty-eight points, commencing with the session 1897-98. This means four years in a high school before entering college, and with the three sessions means a study of seven years before becoming qualified to practice.

Our local Board of Health recently passed an ordinance requiring all milkmen to take out a license (see papers attached). They are also testing with tuberculin all the cows in the city, numbering about 3,500; they are producing at present diphtheria anti-toxine, mallein, tuberculin and antitetanine.

One fact I wish to bring before this Association is, that the meat and milk inspectors appointed by the Health Department are not veterinarians, and in my mind some action should be taken by this Association in the matter.

The number of veterinarians at present employed in official positions in this city is as follows: City Health Department, 2; Street Cleaning Department, 5; Fire Department, 1; Police Department, 0. The U. S. Department of Agriculture employs 7 veterinarians as meat inspectors at the various abattoirs.

As to our experience with the use of tuberculin and mallein as diagnostic agents, we can only say that they have given us positive and gratifying results, and I can say that they are indispensable.

My experience has been that we have not as yet an antitetanine of sufficient strength to cure tetanus, but as a preventive I recommend its use.

The mortality in cattle from anthrax has been very materially reduced by the use of anthrax vaccine, although we have very little use for that agent in our large cities, especially in New York.

The State inspection for the prevention and eradication of tuberculosis has been stopped, due to the lack of money. A bill presented during the last legislation asking for \$300,000 for this purpose, failed to pass. For the same reason, the appraisers, who were appointed to appraise and condemn glandered horses were dismissed, and at present no remuneration is given for glandered horses.

Discussion followed Dr. O'Shea's report, in which a motion prevailed to draft a resolution under the seal of this Society to be presented to local boards of health, petitioning them to employ qualified veterinarians on the boards, which was at follows:

The New York State Veterinary Medical Society in annual convention in the City of Buffalo, September 4 and 5, 1896, do represent as follows:

WHEREAS, the various positions of meat and milk inspectors of the State of New York are now being filled by men who are totally unqualified by education to fill the same; and

WHEREAS, the public interests in these respects are suffering in consequence of such conditions; therefore be it

*Resolved*, That this Society hereby respectfully petitions the said authorities to place in control of these important services none but graduates of recognized veterinary colleges.

Dr. Wilson Huff, County Secretary for Oneida County, rendered an oral report giving details of the sanitary requirements imposed by the Board of Health of the city of Rome on all dairymen who deliver milk in that city. The requirements are quite exacting. Dr. Huff is the sanitary inspector of dairies for the city. His work is securing the inhabitants of Rome pure, wholesome milk.

Oral reports were made of several other counties. They were consensual in the main that if the consumers of flesh and dairy products were properly protected against disease through the medium of these foods, it must of necessity be at the hands of the veterinarian.

A motion prevailed, signed by Drs. O'Shea and Baker, to amend the By-Laws, Article VIII, Chapter I, relative to annual dues, to read as follows: "The dues shall be \$3.00 per annum, payable in advance." It was ordered spread upon the minutes to take its regular course at the next annual meeting.

Also a motion prevailed, signed by H. Sutterby and W. L. Baker, to amend Article VIII, Chapter I, of the By-Laws, to read as follows:

"The application of a candidate shall be accompanied by the initiation fee of five dollars and the first annual dues of two dollars, and if elected the money so received shall be appropriated to the use of the Society. The elect after signing the By-Laws and Constitution, and upon the presentation of the Secretary-Treasurer's receipt for the amount named, shall be presented by the Secretary with a copy of the By-Laws and certificate of membership. If the candidate be rejected, the money so received shall be returned to him."



The Board of Censors reported favorably the following applicants: F. C. Gernside, Mt. Morris; Harry D. Gill, New York; G. C. Kister, Holley; John T. Liddle, West Shelby; F. D. Markham, Utica; J. O. Moore, Wilson; Charles John Mulvey, Moore's; J. A. McCrank, Plattsburg; W. H. Pendry, Brooklyn; Romanzo Perkins, Hardy's; W. L. Williams, Ithaca; Mark D. Williams, Middleport.

A motion was carried to suspend section third of Article V, relative to the election of candidates, and that the candidates presented be received into the Society by unanimous consent.

A motion was carried to levy an assessment on the members of sufficient size conforming with the By-Laws to meet the obligations of the Society, and that half of the requisite amount shall be collected during the years 1896-97, but members elected at the annual meeting of 1896 shall be exempted from said assessment.

Meeting adjourned.

*September 5th.—Second Day's Session.*

Meeting called to order at 9 A. M. by the Secretary. Dr. R. R. Bell was asked to preside, Dr. Hinkley being absent. Unfinished and miscellaneous business was taken up. Letters of regret were presented from Drs. Latourell, of Yonkers, Giffen, of New York City, L. McLean, of Brooklyn, and J. W. Darby, of Port Plain.

The resignation of Dr. J. H. Ferster, of New York City, was offered. A motion prevailed to lay the matter on the table with instructions directing the Secretary to communicate with Dr. Ferster to ascertain the cause, and report at the next annual meeting.

Dr. Crowforth, of Lockport, presented grievances relative to a paper read by him at the last annual meeting of the Society, on the ground that his paper did not receive professional recognition after the same had been solicited by the editor of the *Journal of Comparative Medicine and Veterinary Archives*. The journal, after receiving Dr. Crowforth's paper, refused to publish it, accusing the author of plagiarism. Drs. Geo. Berns and John Wende held to opinions, which were coincident, that Dr. Crowforth's complaint was out of order. The Chair, Dr. R. R. Bell, overruled these opinions, on the ground that Dr. Crowforth was a member of the Society; that he had been asked by its president to prepare and read a paper; he had complied, which made his paper association property, and therefore



was entitled to be heard. Dr. Crowforth asked to be allowed to re-read his paper that the members present might judge of its merit. The chair concurred. After the paper had been read, the Society ordered it laid on the table.

It was moved to proceed with the regular order on the programme. Reading of professional papers was in order. Dr. Thomas Giffen, of New York, was called to read a paper on "Veterinary Education." Absent. Dr. Geo. H. Berns to read a paper on "Navicular Disease in Horses." Dr. Berns asked that his paper be held over for the next regular meeting. The chair so ordered.

Dr. J. P. Thompson, of Niagara Falls, was called to present his paper on "Jurisprudence"; absent.

Dr. Wilson Huff, of Rome, read his paper, "Bacteria in Milk," which was listened to with interest and heartily received.

The chair requested Dr. Pendry, of Brooklyn, to open the discussion. In doing so the Doctor gave some of the details of dairy inspection in Kings County, as required by the Health Department of Brooklyn. He spoke earnestly of the needs of a pure and uncontaminated milk supply for our cities and of the many insidious conditions which expose it to infection, and thought the Society should use its best endeavors to procure such legislation as would establish systematic inspection, quarantine and fair indemnity throughout the State for all cattle condemned and slaughtered as suffering with contagious and infectious diseases.

Dr. W. L. Baker, of Cortland, related some of the conditions surrounding the dairy interests of Cortland County, and called special attention to one dairy near the city of Cortland that was selling its product in that city until a clinical inspection revealed that the herd was tuberculous. The health board then refused the milk, but it was now being sold in New York City.

Dr. John Wende spoke of the character of some of the infantile diseases in Buffalo, and stated that seventy-five per cent. of the deaths of children from enteric troubles were due largely to unclean nursing bottles with long nursing tubes, and believed there would be much less enteric trouble among children if mothers and nurses use the utmost caution in cleaning them.

The discussion on Dr. Huff's paper was instructive and interesting. The Doctor was given a vote of thanks for his very able paper.

A paper, entitled "Veterinarians as Sanitarians," was read by C. D. Morris, after which the meeting adjourned for lunch.

*September 5, 1896.—Afternoon Session.*

Meeting called to order at 1.30 P. M. Dr. R. R. Bell in the chair. A communication was read which had been sent to the Secretary from the Cosmos Club of Washington, D. C., soliciting funds to aid in the erection of a monument to the memory of M. Pasteur in Paris. The Society directed the Secretary to open a subscription, asking for an amount between twenty-five and fifty cents from all the members, to give a receipt for and keep a record of the same.

The chair appointed Drs. H. Sutterby and H. S. Wende as auditing committee to verify the financial accounts of the Secretary for the current year.

After a brief discussion relative to the place for the next annual meeting, the Society decided to go to Syracuse.

Auditing committee reported Secretary-Treasurer's accounts correct.

Thus ended one of the most profitable and enjoyable meetings this Society has ever held, from the view point of numbers and interest.

CLAUDE D. MORRIS, *Secretary*.

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ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

UNIVERSITY OF BUFFALO, BUFFALO, Sept. 4, 1896.

The fourth meeting of the Association of Veterinary Faculties of North America was held at the above place and date, the following members being present: Drs. Lyman and Osgood, of Harvard University; Dr. McEachran, of McGill University; Dr. Smith, of Ontario Veterinary College; Drs. R. R. Bell and James L. Robertson, of American Veterinary College; Dr. Leonard Pearson, of University of Pennsylvania; Dr. D. E. Salmon, of National Veterinary College (Columbian University); Dr. Hughes, of Chicago Veterinary College; Dr. Jas. M. Wright, McKillup Veterinary College; Dr. Stalker, of Iowa Agricultural College; Dr. Stewart, of Kansas City Veterinary College; Drs. Law and Williams, of Cornell University; Dr. Gill, of the New York College of Veterinary Surgeons, and Dr. W. H. Hoskins, President of the United States Veterinary Medical Association.

President Lyman in the chair, and Dr. Gill acting Secretary.

After roll-call, the President in a short address recited the history of and progress made by the Association.

The minutes of the previous meeting were read, and on motion of Dr. Salmon, seconded by Dr. Osgood, were accepted.

The Secretary-Treasurer's report being read, on motion of Dr. Osgood, seconded by Dr. McEachran, was approved and accepted.

The next order of business was the reading of the papers. First subject, "Uniform Course of Instruction," Dr. J. W. Adams of the University of Pennsylvania, speaker; but not being present, was laid over.

The second subject, that of "Mutual Recognition of Students by Colleges Belonging to the Association of Veterinary Faculties," was then in order, and a paper on that topic was read by Dr. H. D. Gill, and discussed by Drs. Law, Pearson, Stalker, Salmon, McEachran, Hughes, Lyman and Wright. On motion of Dr. Pearson, seconded by Dr. Osgood, that a committee of three be appointed to consider the question and to report in thirty minutes. This was amended by Dr. Stalker, seconded by Dr. Salmon, that the committee report at the next annual meeting (instead of in thirty minutes). This motion was again amended by Dr. Salmon, seconded by Dr. Stalker, that a minimum standard of preliminary examinations be recommended. Carried as amended. The President appointed Drs. Law, Salmon and Pearson.

The third subject, that of "Competitive Examinations for Positions in the Veterinary Faculties" was, on motion of Dr. Pearson, seconded by Dr. Salmon, laid on the table.

The fourth subject, that of "College Fees," was, on motion of Dr. Salmon, seconded by Dr. Law, laid on the table.

The next in order was the admission of members; Drs. Law, Williams, Smith, McEachran, Hughes and Wright signing the constitution.

The next order of business was the nomination and election of officers. For President, Dr. Pearson was nominated by Dr. Osgood, seconded by Dr. Bell, and on motion, the Secretary cast the ballot. Dr. Pearson was declared elected. For Secretary-Treasurer, Dr. Gill was nominated by Dr. Osgood, seconded by Dr. Salmon, and was elected, the President casting the ballot. Nominations for executive committee: Dr. Law nominated by Dr. Stalker, seconded by Dr. Osgood; Dr. Stalker nominated by Dr. Bell, seconded by Dr. Osgood; Dr. McEachran nominated by Dr. Osgood, seconded by Dr. Bell; Dr. Salmon nominated by Dr. Osgood, seconded by Dr. Gill; Dr. Robertson nominated by Dr. Bell, seconded by Dr. Gill. It was regularly moved and seconded that the Secretary cast a ballot for each of the executive committee. Carried. The Secretary casting the ballots,

the President then declared the above named gentlemen duly elected members of the executive committee.

Under the head of new business, the question of a national board of veterinary examiners was brought up and discussed by Drs. Salmon, Pearson, Hoskins, Law and Stalker, and a motion of Dr. Pearson, seconded by Dr. Gill, that Dr. Hoskins be requested by this Association to use his efforts on behalf of this Association to procure uniformity in future laws regulating the practice of veterinary medicine in the various states of the United States, and secure the introduction of a clause in such laws that will enable the boards to be established to co-operate with the National Association, and secure a uniform examination, and that Dr. Hoskins be requested to report upon this matter at the next annual meeting. Carried.

On motion of Dr. Osgood, seconded by Dr. Gill, Dr. Hoskins was elected honorary member.

In a very neat little speech President Lyman spoke of the confusion of the meeting, and suggested that hereafter the Association should have a day and time of its own, so as not to have its business interfered with.

On motion of Dr. Osgood, seconded by Dr. Pearson, the meeting adjourned.

H. D. GILL, V.S., *Secretary*.

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## EXTRACTS FROM EXCHANGES.

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### ENGLISH REVIEW.

**RUPTURED DIAPHRAGM [By P. P].**—An interesting case which presented no leading symptoms during life, occurring in an old horse during a case of colic, is as follows: The animal, relieved of his abdominal pains, remained ailing and presented in his gait symptoms which justified the suspicions of an injury to the spine. The animal stood with his hind feet advanced and his back slightly arched; he turned around with difficulty; there was loss of power in the hind extremities and a cringing, painful method of progression. No persuasion could induce the horse to move. The pulse and respirations were increased. There was a peculiar movement of the flanks during respiration, but this was considered as having some connection with the spinal injury. After 10 days' sickness the animal died, and at the post-mortem a vertical tear of the diaphragm was exposed, with thickened edges, through which the stomach and the spleen



had passed into the thorax, and could not be withdrawn until the opening was enlarged.—(*Vet. Rec.*)

**RUPTURE OF THE DIAPHRAGM** [*By Mr. A. Peele*].—In this second case the lesion was due to a traumatism received by a shaft point passing under the left side of the chest from forwards backwards. The animal was laid up for about a month for the healing of the wound and during that time presented some slight abdominal pains. She did light work for a month afterwards, and almost exactly two months from the day she received the first injury she was taken sick with colic, obstruction of the bowels and symptoms of pleuritic trouble. The treatment of purgatives, sedatives, enemata, etc., failed to relieve, and the animal died. At the post-mortem an opening of the diaphragm on the left lower muscular part of the muscle, through which several feet of the small intestines had passed. These were congested but not gangrenous. The diaphragm-made opening was round, appeared fibrous, and of a pale straw color. Part of it was congested and evidently recent.—(*Vet. Rec.*)

**FISTULA OF THE PAROTID DUCT** [*By W. Smith*].—This is the report of the failures that the author met in the treatment of an injury occurring through a wire fence. He tried alum and flour with immobility of the jaws for twenty-four hours; then the hot iron, with pitch plaster; a third attempt was made with cantharides, and yet no better result. As a suggestion to his inquiries for treatment, which are made by him, the treatment which was employed by an old American veterinarian, Dr. Thayer, of Newton, which was reported by him to the U. S. V. M. Association, might also be recommended—viz. : the introduction of a silver tube in the divided canal, holding both ends sufficiently close together, to permit of cicatrization. The silver tube being withdrawn afterwards from the mouth.—(*Vet. Rec.*)

**FRACTURE OF THE PELVIS FOR A TIME WITHOUT DISPLACEMENT.**—This record is of the case of a mare which was injured during breaking. She had trashed and kicked a great deal the last day she was in harness, and, after a few days of rest to allow her wounds to heal, she was put to work again. When about a mile from home she fell suddenly lame, and was taken back to her stable, where she laid down. She had some trouble to get up, but with a little assistance, succeeded. When standing she carried but little weight on her near hind leg, and she moved it forward with a circumductive movement. Rectal and vaginal examination unavailing. Azoturia is suspected, but normal urine drawn excludes it. The mare received local



treatment over the hip, three grains of morphine, and, seeming comfortable, was left for the night. Early in the morning she dropped down suddenly and died. At the post-mortem internal hæmorrhage into the abdominal cavity by rupture of the external iliac on the left side was found, with fractures of the posterior iliac spine on the right side; of the symphysis body of both pubes; fracture of the symphysis ischii, and ramus of the ischium on the left side. The injury was received the day the mare kicked so much, the fragments had been kept in position by the periosteum covering the bones, and, becoming displaced at the time of the fall, had caused the injury to the blood vessels.—(*Vet. Jour.*)

FRACTURE OF THE SCAPULA [*By W. R. Davis*].—This is the record of a horse which had been run into by another attached to a dairyman's van and had received an extensive wound on the middle of the anterior region of the scapula. The animal was very lame, and the wound formed a large but rather superficial cavity, extending upwards into a gap in the anterior spinatus, and at the bottom the anterior edge of the scapula could be felt, ragged, denuded of periosteum, with bits of bones imbedded in the muscles around. The wound was freely enlarged, the pieces of bones removed and the parts dressed twice a day with antiseptic injections. The animal recovered in four weeks and soon resumed work. This case illustrates the great advantage, says the author, of the free use of antiseptics in the treatment of wounds.—(*Vet. Jour.*)

#### GERMAN REVIEW.

By W. V. BIESER, D.V.S., New York City.

IMPACTION OF AN OAT SHELL IN THE CORNEA OF AN OX.—A two-year-old ox had suffered with severe conjunctivitis for three days. Upon arrival I found the right eyelids intensely swollen, hot, painful, and tightly closed. Only after a great deal of trouble could the eyelids be opened to the smallest extent. The cornea was hazy, opaque; at its junction with the sclera at the lateral angle of the orbit, I found a tightly embedded oat shell. I first tried to extract the foreign body by Ferrant's method. That is, I carried the right index finger covered with a moistened silk handkerchief under the lids and moved it over the circumference of the cornea in the region of the foreign body, as well as the sensitiveness of the parts ad-

mitted. But inasmuch as I had to carry the finger in 4 c.cm. in order to reach the eyeball—so excessively swollen were the eyelids—the silk handkerchief not being slippery but adhering, as silk will do to everything except the foreign body, only hindered me in the attainment of my object. After repeated failures I removed the body with my index finger. Some authors advise the use of pincers, paper rolled tightly together in the form of a cylinder with a bulbous end, and other artificial means. In this case, the extreme inflammation, swelling of the lids, depth of the eyeball from the surface, the inability to properly see the eyeball, much more the extreme irritability and spasm of the parts, would have rendered such methods inappropriate, inasmuch as they would have added to the danger of injuring the already extremely inflamed parts, the danger of blind groping practically inaccessible to such artificial attempts. The index finger (*tactus erriditis*) is the best instrument here. I would like to state further that, not knowing the nature of the case until my arrival, I removed the body without cocaine—(*Schweiz. Archiv. für Thierhilk.*)

**HYDRAMNION A DECIDED CAUSE OF RIGIDITY OF THE CERVIX IN A COW.**—The causes of cervical rigidity are the following: 1. Various degrees of torsion of the uterus. 2. Hypertrophy of the cervix. 3. Cicatrized cervical rents. 4. Large tumors in the cervix or its locality. 5. Rupture of the uterus. 6. Excessive liquor amnii. I shall only discuss the last cause. An old cow with a decided bilateral uterine swelling had had labor pains for 20 hours, when the pains gave out. Upon vaginal and rectal examination, I found a large degree of hydramnion; the cervix drawn high up into the pelvis, the os uteri tightly contracted, and hard to reach by the finger; the udder was swollen and filled with colostrum. The uterine actions were feeble, as were to be expected from such a condition of affairs; for the uterine layers—especially the circular and longitudinal muscular fibres—were so stretched by the excessive liquor amnii, that they were temporarily paralyzed and could no longer exert their contractile powers, consequently the bag of waters could not be pressed into the cervix and act as the natural cervical dilator.

Nothing of the foetus could be felt owing to the large quantity of liquor amnii. I therefore resorted to manual dilatation of the cervix, boring the middle finger through the external and internal os; this accomplished I bored through the amniotic sac, let off an enormous quantity of fluid and then dilated the cer-

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vix—first with the closed and then with the opened hand—to its utmost capacity and easily delivered a full termed but dead fœtus. By good diet the weakened mother recovered.—(*Schweiz. Archiv. für Thierhkl.*)

DROPSY OF THE SUBCUTANEOUS CONNECTIVE TISSUE OF THE HEAD AND NECK OF A FŒTUS, ASSOCIATED WITH BREECH PRESENTATION, AN OBSTRUCTION TO DELIVERY.—I was called to see a cow which was said to be calving four or five weeks too soon. Previous efforts at extraction had nearly torn off the hind limbs. A partly mutilated fœtus presented by the breech. The hip joints had entered the vulva. The examining hand easily passed the hips; reaching the shoulder, I with difficulty finally passed the hand forward and reached the head. The upper part of the neck could not be circumscribed by the fingers; the neck was excessively swollen; the head felt like a soft, doughy, bullet-like, misshapen and voluminous mass; I naturally thought of hydrocephalus with dropsy of the subcutaneous connective tissue of the neck and shoulders; as the cervical canal was small I gave a grave prognosis. I proceeded to deliver. Upon slight traction the bones of the legs gave away at the hips and hocks. This being the case I disarticulated the bones successively up to the vertebræ. Then I removed the viscera. I then tried to diminish the dimension of the head and neck by drawing off the water, but failed. From lack of room it was impossible for me with my pocket knife to incise the head and neck. Hence nothing remained but to deliver by force. Taking an ordinary butcher's hook I fastened it into the tissues, ran a rope through it, and gave the rope to six persons, three at each end of the rope. I secured the mother to the stall by means of ropes run over a pad placed under the vulva. At the first pull the chest entered the vagina but the shoulders caught; after repeated tractions they entered the vagina, then the head followed and the fœtus was delivered after two hours. On both sides of the neck was a large serous cystic infiltration, no hydrocephalus, but an excessive dropsy of the connective tissue of the head. The mother recovered nicely after ten days.—(*Schweiz. Archiv. für Thierhkl.*)

DROPSY OF THE KIDNEYS OF A FŒTUS AS A HINDRANCE TO DELIVERY.—The front legs and head of a fœtus had protruded through the vulva. Strong traction failed to budge it any further. A. believed that the obstruction lay in the abdomen of the fœtus. He removed the left leg and shoulder, opened the chest and removed its viscera with the diaphragm.

He then withdrew from the abdominal cavity a large portion of an enormous swelling filled with fluid which burst under pressure of the hand. The swelling was a kidney. He removed after this a second similar swelling. The two kidneys together were of the circumference of four times a man's head. The fluid contained in both kidneys amounted to 15 litres. That delivery then proceeded without difficulty is easily understood.—(*Schweiz. Archiv. für Thierhkl.*)

THE BEST METHODS OF ANÆSTHESIA FOR DOMESTIC ANIMALS.—As a result of the interesting labors of G. it has been made clear that with few exceptions, anæsthesia in veterinary medicine ought to be more extensively employed. The best methods are: 1.  $\text{CHCl}_3$  narcosis. This is the least safe and may be fatal. The best procedure according to G. is to let the animal breathe the  $\text{CHCl}_3$  exclusively through the mouth, always plugging up the nostrils. 2. The mixed methods of atropine and morphine with  $\text{CHCl}_3$ , and morphine and chloral with chloroform, can be used with less danger. The former method has the disadvantage of causing longer sleep than one would wish, also causing unconsciousness or faints. The latter, if the chloral is pushed too far can be attended with serious consequences. 3. Mixture of ether and chloroform. It is more correct—and less dangerous—to increase the potency of the ether by the addition of chloroform than to diminish the dangers of chloroform narcosis by the addition of ether. The mixture of ether and chloroform is always—in order to avoid accidents—to be preferred to pure chloroform.—(*Schweiz. Archiv. für Thierhkl.*)

#### FRENCH REVIEW.

ŒSOPHAGEAL OBSTRUCTION IN A SLUT [*By Mr. Gallier*].—This is a very interesting record of a fox-terrier of great hunting value operated upon once for a fibroma of the mammæ. A year after suffering with a mild trouble. She had enjoyed good health until lately. She refused her ordinary meal, ate grass and vomited by intermittence. If she drank she vomited; whatever she took was rejected by the mouth. The author was called in consultation, and found her with high fever, the flank contracted, the intestines empty, the respiration quiet, breath foetid; palpation did not reveal the presence of foreign bodies in the intestinal tract, yet in the presence of the constant vomiting and the absence of foreign substances in the intestines, a diagnosis was made of ob-



struction of the alimentary canal. The patient soon grew worse and died. At the post-mortem the stomach contained but little liquid, the intestines empty. In the thorax, the pleural cavities were filled with fluid of a peculiar color, and the œsophagus was found considerably thinned and dilated by a mass formed by bones, one of which had perforated the œsophagus and allowed the fluids given to the animal to drop into the pleura. To all appearances the trouble was of old date.—(*Ibid.*)

CURIOUS CASE OF RECOVERY IN A CRIBBER [*By Mr. J. Maléffe*].—A horse was severely affected with cribbing, constantly sucking wind. One day he started for a good run, and as he was to be arrested, he met with an obstacle, and fell down with a somersault which resulted in a luxation of the fourth cervical vertebra. Unable to get up, he remained lying 36 hours, and was considered as good as dead. The author made some attempts to reduce the luxation and succeeded. From that moment an improvement became manifest, the animal began to move his head, got up and tried to eat. But the most interesting fact is that from that moment he stopped cribbing. This fact seems to prove that the etiology of this bad habit depends on the pneumogastric and the sympathetic.—(*Rec. de Med. Vet.*)

NERVOUS TROUBLES DUE TO A CHRONIC DISEASE OF THE LIVER—BILIARY LITHIASIS [*By M. Averons*].—A case of unusual interest is recorded by the author in the *Revue Veterinaire de Toulouse* in relation to a horse which presented all the symptoms of a general comatose condition, now and then interrupted by manifestations of rage, which made him take hold of and bite his stone manger, upon which he tore all his gums; some colicky pains; micturition difficult; locomotion imperfect, automatic; his respiration slow, the pulse accelerated and strong, the temperature 38.8° C. Under suspicion of cerebral congestion, he was placed under treatment, which seemed to give him so much relief that he was about to be considered as convalescent, when all of a sudden the symptoms assumed a new and more severe form, which ended by death in convulsions. At the post-mortem among the numerous lesions found in the intestines, the stomach and the peritoneum, the liver presented organic changes and also a dilatation, a tumor of the choleduc canal, which contained a large calculus, weighing 258 grammes (over 8 ounces). The divisions of the biliary duct were filled by thousands of little calculi. The kidneys were enlarged, the heart somewhat hypertrophied. The cerebro-spinal axis and its membranes were healthy. In resuming the conclusions of the well-described symptomatology and



pathological anatomy of the case the author says, "All the nervous troubles presented by the patient, ataxia, amaurosis, etc., are those of uræmic intoxication. My patient evidently died of uræmia."

DELIVERY IN A COW OF A VIABLE FŒTUS ON THE 22<sup>ND</sup> DAY OF GESTATION [*By M. Capitaine*].—The size of the product of this premature delivery was in proportion with its development, its skin was covered with very short hairs, the horn of its toes was soft, a rudiment of vulva and of mammæ indicated its sex. Unable to rise or to stand, it seemed full of life, and was artificially fed by the owner, about a pint of milk being given night and day, five times in the twenty-four hours. After eight days it was able to get up but not strong enough to stand, but fifteen days after birth was able to suck its mother. It continued to develop well.—(*Revue Veter.*)

#### ITALIAN REVIEW.

OCULAR PROTHESIS IN THE HORSE—NEW OPERATING PROCESS.—In *Il Nuovo Ercolani* Mr. O. Viguzzi recommends the placing of the artificial eye only three or four weeks after the enucleation of the natural eye, that is, when all inflammation has subsided. But at that time, the eyelids are more or less drawn into the orbital cavity, and it may be very difficult to fix the artificial eye. To avoid this difficulty, the author has had eyes prepared, one temporary and one permanent. The first is pierced with four holes in cross, three of which are of even diameter, the fourth, the lower one, a little larger; to permit the introduction of antiseptic powders, and drains of hydrophylous cotton. The superior is covered by the upper eyelid and allows the irrigation of its internal face. The two lateral give passage to rubber draining tubes, carrying holes in the portion corresponding to the concave surface of the eye. Thus prepared, the apparatus is put in position as soon as the diseased eye has been removed and the cavity has been antiseptically dressed. The after care consists in washing the operated region as follows: Before all, clean the drainage tube with a sublimate solution and then introduce through the lower opening of the artificial eye phenicated cotton. After the washing of the drain, it is closed with forceps or with the fingers to prevent the escape of the solution, except through the superior or the lower opening. The excess of the liquid which may remain in the

bottom of the orbital cavity is absorbed by the phenicated cotton. Thanks to this treatment, Mr. Vigezzi claims that after fifteen days all inflammation has subsided and the permanent eye can be put in position.

**DIABETES FOLLOWING CHRONIC HYDROCEPHALY IN COWS** [*By Mr. A. Girotte.*].—In the same journal, *Il Nuovo Ercolani*, the author writes that in the beginning of the fall and as soon as a régime of dry feeding was commenced, a cow suddenly presented signs of an insatiable thirst, drinking 120 to 150 quarts of water a day. As a consequence of this enormous absorption, there was abundant polyuria, about 100 quarts of urine being expelled in the twenty-four hours. Otherwise she presented all signs of health and had a good appetite. The analysis of the urine showed a proportion of sugar of 7 grains per 1000. The animal was killed and at the post-mortem showed a well marked ventricular hydrocephaly. To this lesion the author attributes the presence of sugar in the urine and adds that if the diagnosis had been made during life, recovery might have been obtained by repeated injections of muriate of pilocarpine, which would have produced the absorption of the ventricular exudate.

**UPON THE WAY TO EXTRACT CALVES IN BREECH PRESENTATION** [*By M. G. Fabretti.*].—This presentation is the one which presents most difficulties for the accoucheur and the less security for the life of the mother and her product. The author has almost always succeeded in bringing the calf alive, and to have the mother free from trouble by her delivery. He ignores entirely all recommended processes, hooks, ropes, etc., as well as the extension of the hocks backwards. On the contrary, he pushes the hind legs as far under the abdomen as he can, and, taking hold of the haunches with both hands, he moves them sideways, up and down, and taking advantage of the efforts of the mother, he finally succeeds in pulling the calf backwards and out of the vagino-vulvar canal.—(*Il Nuovo Ercolani.*)

**FARM ANIMALS IN ITALY.**—From the *Giornale Zootechnica and Caseificio* the following figures are taken, given by the Secretary of Agriculture: Bovine, 5,000,000; horses, 920,000; donkeys, 1,000,000; mules, 300,000; sheep, 6,900,000; goats, 1,800,000; swine, 1,800,000. Their value is estimated at 191,-200,000 francs, about \$38,240,000.

**CANDIDATES** for next meeting place: Nashville, Tenn.; Columbus, Ohio; Detroit, Mich.; Kansas City, Mo.; and Cleveland, Ohio.

## NOTES OF THE BUFFALO MEETINGS.

THE State Society will meet in Syracuse next year. Its centrality won the day.

PRINCIPAL SMITH, of the Ontario College, was an interested visitor to the meeting of the Faculties.

DR. WILSON HUFF'S paper on "Bacteria in Milk" was a very practical exposition of a very scientific subject.

THE discussion on the report from Kings County was the most animated of the meeting of the State Society.

How two-year schools can continue as such in the face of the sentiment expressed at Buffalo is hard to understand.

PROFS. LAW AND WILLIAMS related many instances before the State Society of spontaneous recoveries from glanders.

CONGRESSMAN MAHANY, of Buffalo, delivered a most scholarly extemporaneous discourse before the guests at the banquet.

It was shown in papers and discussions that few autopsies are now considered complete without a microscopical examination.

DR. STEWART, the Secretary *par excellence*, went home loaded down with money—but the delinquents will be goaded just the same.

MRS. DR. HINCKLEY, of Buffalo, did so much to make the lady visitors happy, that their stay will ever be one of the most pleasant memories of their lives.

THE Buffalonians set a killing pace in the matter of entertainment that will be hard for other cities to follow. Their natural resources was a considerable aid to them.

DR. LEONARD PEARSON, State Veterinarian of Pennsylvania, and one of the editors of the *Veterinary Magazine*, made a record for doing much effective work in debate and committee.

DR. WM. H. PENDRY, of Brooklyn, advocated before the State Society, the establishment of a State Bureau of Animal Industry, with the especial object of controlling tuberculosis.

THERE can be no question but that sanitary medicine is more enticing to state veterinarians and experiment station veterinarians than to practitioners of veterinary surgery. The latter is more concerned in diseases with which he daily comes in contact. Would not a more equal mixture of ingredients make a smoother ointment?

NASHVILLE, TENNESSEE, will make a bold bid for the meeting of '97. It is thought that the august presence of the National Association will greatly assist the profession in that state.

DR. WM. DOUGHERTY, of Baltimore, seldom fails to be present at the meeting of the U. S. V. M. A. and the commencement exercises of his alma mater, the American Veterinary College.

THE number of good speakers was generally remarked, among them may be mentioned Stalker, Pearson, Osgood, Salmon, Lyman, Williams, Grange, Robinson, Hoskins, Hinman, and others.

THE attendance upon the National Association was more than national in reality—from Nova Scotia to Louisiana, from Manitoba to Alabama, from Montana to Tennessee, from Nebraska to Maryland.

THE banquet at the Genesee House on the evening of the last day of the National Association meeting was a brilliant success,—the repast exquisite, the speaking of a high order, and the good fellowship overflowing.

DR. W. J. HINMAN, of Manitoba, says his province has the best veterinary laws in existence. This comes from having veterinarians in the legislature. We might do well to emulate her example by encouraging veterinarians with political proclivities.

WE heard some comment to the effect that practical subjects were being crowded out of the deliberations too much, that while the great and all-absorbing topics of state medicine were of paramount importance to all others, that they were not so with all members.

IN the Faculties meeting the foundation was laid for a union of work and recognition between the various state boards of veterinary examiners. The chief obstacle seemed to be that New York was compelled by law to hold to a too high standard of matriculant examination.

DR. GEORGE H. BERNS, as county secretary of the New York State Society for Kings County, presented one of the fullest and most interesting and comprehensive reports that has ever been received in that society. If the various secretaries were to follow his example that part of the programme would be the most entertaining of the meeting.



PROFS. MCEACHRAN, of McGill, and Smith, of Ontario, classmates in Scotland, had a heated discussion at the banquet upon the proper length of a veterinary college course, but finally buried the hatchet under a bumper of wine.

No man ever worked harder nor succeeded better in making others comfortable and happy than did Chairman Hinkley, of the local committee of arrangements. He was ably seconded by Drs. Samuel Somerville, Jr., John Wende and Willyoung.

THE absence of Prof. Olof Schwarzkopf, chairman of the Executive Committee of the Association of Faculties, was greatly regretted by himself and his colleagues. His official duties detained him at the last moment, but he fulfilled his offices by letter in a very satisfactory manner.

SCARCELY a veterinary school lacked representation at Buffalo. The American, Robertson and Bell; Chicago, Hughes; McKillip, Wright; New York, Gill; Harvard, Osgood and Lyman; Cornell, Law and Williams; Pennsylvania, Pearson; Kansas City, Stewart; Iowa, Stalker; National, Salmon; McGill, McEachran; Ontario, Smith.

### A PLEASANT TRIP TO TORONTO.

A number of members of the United States Veterinary Medical Association, who were in attendance upon the recent meeting in Buffalo, availed themselves of an opportunity to visit the city of Toronto. A party of veterinarians crossed Lake Ontario on the evening boat on Friday, September 4th, consisting of Drs. Cotton and White, of Ohio; Drs. Faulkner and Hoffman, of Western Pennsylvania; Drs. Hoskins and Pearson, of Philadelphia; Drs. Gill and Ellis, of New York; Dr. Ackerman, of Brooklyn; Dr. Stewart, of Kansas, and Dr. Hughes, of Chicago. Drs. Pearson, Hoskins and Stewart and Mrs. Hoskins were guests at the house of Prof. Smith on the evening of the 4th, Drs. Osgood, Gill, Ackerman and Ellis, and Mrs. Osgood were guests at the Queen's Hotel, the rest of the party stopping at the Red Horse and other hotels.

On the morning of the 5th, by appointment, the party met Prof. Smith at the Ontario Veterinary College, in Temperance Street, and after being shown through the institution, were driven around the city in carriages and shown the points of interest; among other things, stopping at Prof. Smith's residence, and being introduced to his family. This part of the pro-

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gramme over, the Professor piloted the party to the Industrial Fair, then going on, and in addition to seeing the grand horses and cattle and other products of the fertile soil of Canada, the party were introduced to the president and other members of the association managing the fair, and were invited by them to a beautiful, artistically decorated bower hung all round with green boughs, etc., to partake of luncheon with the members and others of their guests. The place presented a beautiful spectacle, all trimmed up with the English flags. The tables were waited on by the daughters of the members, a very pretty lot of young ladies, wearing bows made of the English flag. In the midst of the luncheon all were requested to rise and sing "God Save the Queen." After partaking of a sumptuous meal, toasts were responded to by gentlemen having the prefix of Sir to their names, and others with the affix of M. P. after them. After a number of speeches, Dr. Hoskins was called upon to respond for the U. S. V. M. A., and it is needless to say that he did so in an able and eloquent manner. The party started homeward on the grand lake steamer Corona, in high spirits, soon to be lowered, however, by sea sickness, which overcame nearly every one on board, so rough was the lake. They reached Buffalo in time to take the midnight train for New York, feeling well satisfied with their trip to a foreign land.

R. W. E.

## NEWS AND ITEMS.

PROF. W. J. COATES, who was unfortunate enough to break his arm, is making a rapid recovery.

TO BE UP TO DATE.—Read the AMERICAN VETERINARY REVIEW, and join veterinary societies.

DR. H. R. MACAULAY, of Indianapolis, is deserting veterinary for human medicine, having matriculated at Montreal.

OBITUARY.—Dr. J. L. Windolph, a genial and whole-souled practitioner, died at his residence in Darlington, Md., on the night of August 21st.

PROF. JAS. L. ROBERTSON is enjoying the best of health and will resume lecturing on equine pathology at the American Veterinary College this month.

WHY don't the Judiciary Committee prosecute illegal practitioners? Have they no material to work on or what? Surely the chairman ought to answer—why this delay?

DR. H. B. ADAIR, of Kansas City, and Dr. F. W. O'Brien, of Hannibal, Mo., have passed civil service examinations and been placed upon the eligible list of the Bureau of Animal Industry.

DR. R. A. ARCHIBALD, late of San Francisco, has severed his connection with the Bureau of Animal Industry, moved to Oakland, formed a copartnership with Dr. F. E. Pierce, at 1720 Webster Street, and settled down to private practice.

DR. FRANK H. MILLER, of Burlington, Vt., who has been studying the specialty of canine pathology in Europe for some time, has returned to this country, and expects to locate in New York City and devote himself to that branch of veterinary science.

THE VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY will hold its next regular meeting (the first since June), Wednesday, Oct 7th, at 8 P.M., in the Academy of Medicine, 43d St., near Fifth Ave. All members should be present, as important matters will be discussed.

DO YOU?—Do you get cases you do not understand? . . . Do you get a complete history of the case? . . . Do you note the symptoms? . . . Do they die? . . . Do you hold post-mortems? . . . Do you write short reports of such cases for the AMERICAN VETERINARY REVIEW and become informed about such cases? Try it and see the results. F. X. T.

THE ACME OF QUACKERY.—The following paragraph is taken from a circular which fell into our hands at Buffalo: "Ready for use, is my colic drench. I can cure colic instantly if taken in time. Had four cases, all different, inside of ten days. Finally never lost a case. You cannot make a mistake with this medicine in any case; for if the animal don't walk on this he never will on any other," etc.

HEAT PROSTRATIONS.—H. D. Fenimore, D. V. S., of Knoxville, Tenn., writes as follows: "Was called to a number of horses that were overcome by heat this summer. Some showed the mildest symptoms of slowness and weakness of gait, perspiration checked, panting, nostrils dilated, pulse rapid and weak, while others showed these symptoms very much exaggerated and unconsciousness. I treated them all alike by turning the hose on them in full force, particularly on the head and back. In every case they regained consciousness in from one-half to three-quarters of an hour, and by the time they were rubbed dry they were ready for their accustomed meal, apparently as well as ever."

THE NEW YORK COUNTY V. M. ASSOCIATION meets this month after its summer vacation, and all qualified men in Kings, Queens, Richmond, Suffolk and Westchester Counties are now eligible for membership. This can easily be made the strongest working association in this country, and all metropolitan veterinarians should send in their applications to the Secretary, Dr. Robert W. Ellis, 531 West 152d Street, New York.

MORE CHEERING WORDS.—A veterinarian of the South writes under date of Sept. 8th, and we take the liberty of extracting a paragraph referring to this publication: ". . . The REVIEW has easily taken the foremost rank of American veterinary publications. . . . It is essentially an American veterinary review, and it does not give any evidence of being published for the aggrandizement of any one of its editors, nor of any graduate of any particular school, even though it is owned and edited by two professors of a school from which I did not graduate."

DEATH OF CHARLES F. DOUGLASS, D.V.S.—By a late issue of the *Jamaica Post*, published at Kingston, Jamaica, West Indies, we learn of the sad death from fever of the above promising and popular member of the veterinary profession. Graduated from the American Veterinary College in 1892, he had been practicing in his native city until a few months ago, when he accepted a government position in Hayti, and had just assumed charge of his new duties when the fatal fever attacked him. It seems that death is especially active among the alumni of the A. V. C.

PASTEUR VACCINE COMPANY, LIMITED.—The advertisement of this company is printed elsewhere. It was formerly the Pasteur Anthrax Vaccine Co., but they have enlarged their business by going extensively into the manufacture of tuberculin, and hence the change. They have recently moved into more commodious quarters in Fifth Ave., Chicago, and are prepared to furnish corporations and individuals with a pure article of the latest serums at moderate prices. Mr. Harold Sorby is manager of the branch for the United States and Canada, and the character of their productions is worthy the confidence of the public.

CRIBBING CURED BY THE ELECTRIC CURRENT.—A valuable six-year-old trotting horse formed the habit of crib biting on the manger and parts of the stall. It became so persistent that he fell a victim of indigestion. The owner put in an induction

coil, a three-cell battery, a flexible cord led from it to the horse's back under the surcingle. The stall was lined with tin where the horse had been chewing. The connection was made so that when he touched his lips to the tin at any point the electric current ran through his head and along his spine to the surcingle. This would cause him to turn away with disgust, and after vain efforts to pursue his former pastime, nothing could induce him to again attempt it, and the result is that he is now eating and digesting his food naturally.

**SPAYING MARES.**—The Montana Experiment Station has begun experiments in spaying mares, of which it says: Heretofore this operation has been performed chiefly in isolated cases of disease or vice. It is now proposed with our over-production as an economic measure to limit the production and control in a measure the quality of our horses and render more valuable for work purposes those operated upon. It is believed that spayed mares will prove more tractable and kind than open mares during their periods of "heat"; that they will escape the loss of flesh and condition which open mares undergo at this period; that they will prove neater and cleaner in the stable than geldings and be free from the annoying accumulations of dirt in the sheath of the latter, and that in every sense they will be equal, if not superior, to geldings in form, symmetry, courage, endurance and all essentials that go to make up a serviceable horse. In addition to these expected advantages it is evident that mares not intended for breeding purposes are free from the annoying danger of accidental impregnation by mongrel stallions which infest so many of our ranges. A number have already been spayed with apparently no greater danger than castrating colts, and it is desired to continue the experiment on a number of good mares in lots of twenty to thirty each free of charge to such owners as will take sufficient interest in the matter to afterwards handle the animals and report the results.

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#### **PRACTICE FOR SALE.—LAST NOTICE.**

A well-established Veterinary Practice, in a city of 80,000, in a splendid agricultural district. Only one competitor. Good reasons for selling. Address, "PRACTITIONER," No. 1302 Felix Street, St. Joseph, Mo.

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#### **BACK NUMBERS WANTED.**

For Dr. W. L. Williams' File: VOLUME XVIII., No. 6, (September).

For Dr. S. Stewart's File: VOLUME XIX., No. 9, (December, 1895).

Any subscriber having duplicates of either or both of above numbers will receive 25 cents each and thanks by sending to office of THE REVIEW, 141 West 54th Street, New York.